

## CURRICULUM VITAE

Name : Dr. Indrani  
Date of Birth : 22-12-1989  
Marital Status : Married  
Religion : Hindu  
Nationality : Indian  
Language Known : English, Hindi.  
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Delhi 110009  
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### OBJECTIVE:

To pursue research as well as teaching simultaneously to expand my knowledge and improve skills in the field of chemistry that provides opportunities for advanced research.

### Professional Specialty :

- Study of protein folding/unfolding in the presence of ionic liquids
- Bio-macromolecules and macromolecules interactions

### Expertise:

- Fluorescence spectroscopy
- UV-Absorbance spectroscopy
- FT-IR spectroscopy
- Circular dichroism (CD) spectroscopy
- Dynamic light scattering (DLS)
- Differential Scanning Calorimetry (DSC)
- SEM and TEM analysis
- Refractive index measurements
- Viscometer
- Density Meter
- Ultrasonic Interferometer
- Potentiometer
- Conductometer

- Nephelometer
- Polarimeter

### **Computer Efficiency:**

Knowledge of computer software - MS Office, Excel, Visio, Origin, Chem Draw, Hyperchem and Power Point.

### **Teaching Experience:**

1. Working as an Assistant Professor (ad hoc) in Hansraj college, University of Delhi, (*July 2017 to till date*).
2. Worked as an Assistant Professor (guest faculty) at Department of Chemistry, University of Delhi, (*January 2017 to April 2017*).
3. Worked as an Assistant Professor (guest faculty) at Acharya Narendra Dev College, University of Delhi, (*January 2017*).

### **Academic Qualification**

- **PhD (Physical Chemistry)**, 2012-2017  
**Title of the Thesis:** Deciphering the role of ionic liquids in the structure and stability of proteins.  
Department of Chemistry, University of Delhi, Delhi, India-110007.
- **MSc. (Physical Chemistry)**, 2009-2011  
1<sup>st</sup> Division  
Hindu College  
University of Delhi, Delhi, India-110007
- **BSc. (Chemistry Honours)**, 2006-2009  
1<sup>st</sup> Division  
Daulat Ram College  
University of Delhi, Delhi, India-110007

### **Research Publications**

1. **Indrani Jha**, Pankaj Attri and Pannuru Venkatesu. Unexpected effects of the alteration of structure and stability of myoglobin and hemoglobin in ammonium-based ionic liquids.

*Phys. Chem. Chem. Phys.*, 2014, 16, 5514-5526. (Highlighted on the cover page of PCCP journal of this volume).

2. Pankaj Attri, **Indrani Jha**, Eun Ha Choi and Pannuru Venkatesu .Variation in the structural changes of myoglobin in the presence of several protic ionic liquid. *Int. J. Biol. Macromol.*, 2014, 69, 114-123.
3. **Indrani Jha** and Pannuru Venkatesu. Endeavour to simplify the frustrated concept of protein ammonium family ionic liquid interactions. *Phys. Chem. Chem. Phys. (Perspective)*, 2015, 17, 20466-20484.
4. **Indrani Jha**, Awanish Kumar and Pannuru Venkatesu. The Overriding Roles of Concentration and Hydrophobic Effect on Structure and Stability of Heme Protein Induced by Imidazolium-Based Ionic Liquids. *J. Phys. Chem. B*, 2015, 119, 8357-8368.
5. **Indrani Jha** and Pannuru Venkatesu. Unprecedented improvement in the stability of hemoglobin in the presence of promising green solvent 1-allyl-3-methylimidazolium chloride. *ACS Sustainable Chem. Eng.*, 2016, 4, 413-421.
6. **Indrani Jha** and Pannuru Venkatesu. Deciphering the interactions of bromelain with carbon nanotubes: Role of protein as well as carboxylated multiwalled carbon nanotubes in a complexation mechanism. *J. Phys. Chem. C*, 2016, 120, 15436-15445.
7. **Indrani Jha**, Meena Bisht and Pannuru Venkatesu. Does 1-allyl-3-methylimidazolium chloride act as a biocompatible solvent for stem bromelain? *J. Phys. Chem. B*, 2016, 120, 5625-5633.
8. Meena Bisht, **Indrani Jha** and Pannuru Venkatesu. Comprehensive Evaluation of biomolecular Interactions between Protein and Amino Acid Based Ionic Liquids: A Comparable Study between [Bmim] [Br] and [Bmim] [Gly] IonicLiquids. *Chem. Select*, 2016, 1 , 3510-3519.
9. **Indrani Jha**, Anjeeta Rani and Pannuru Venkatesu. Sustained stability and activity of lysozyme in choline chloride against pH induced denaturation. **ACS Sustainable Chem. Eng.**, 2017, 5, 8344–8355.
10. P.K. Kumar, **Indrani Jha**, Pannuru Venkatesu, I. Bahadur and E. Ebenso. A comparative study of the stability of Stem bromelain based on the variation of anions of imidazolium-based ionic liquids. **J. Mol. Liq.**, 2017, 246, 178-186.

11. A. Rani, **Indrani Jha**, Pannuru Venkatesu. Undesirable impact on structure and stability of insulin on addition of (+)-catechin hydrate with sugar. *Arch Biochem Biophys.*, 646 (2018) 64–71.
12. M. Bisht, **Indrani Jha** Pannuru Venkatesu. Does choline-based amino acid ionic liquid behave as a biocompatible solvent for stem bromelain structure? *Process biochemistry*, 2018, 74, 77-85.
13. **Indrani Jha**, Meena Bisht, Naveen Mogha and Pannuru Venkatesu. Effect of Imidazolium-Based Ionic Liquids on Structure and Stability of Stem Bromelain: Concentration and Alkyl Chain Length Effect. *J. Phys. Chem. B*, 2018, 122, 7522-7529.
14. Pannuru Kiran Kumar, **Indrani Jha**, Anamika Sindhu, Pannuru Venkatesu, Indra Bahadur Eno E. Ebenso. Experimental and molecular docking studies in understanding the biomolecular interactions between stem bromelain and imidazolium-based ionic liquids. **J. Mol. Liq.**, 2020, 297, 111785
15. Sumit Kumar, **Indrani Jha**, Navin Kumar Mogha, Pannuru Venkatesu. Biocompatibility of surface-modified gold nanoparticles towards red blood cells and haemoglobin. **Appl. Surf. Sci.** 2020, 512, 145573.
16. A comparative insight into the stability and enzyme activity of cytochrome in the presence of Fe<sub>3</sub>O<sub>4</sub> and Fe<sub>3</sub>O<sub>4</sub>-OH nanoparticles. Paper under preparation.

### **Book Chapter**

1. Awanish Kumar, Meena Bisht, **Indrani Jha**, and Pannuru Venkatesu. Progress and Developments in Ionic Liquids (The Role of Ionic Liquids in Protein Folding/Unfolding Studies). *InTech publishers*, 2016.

### **Research & Development Projects (Ongoing)**

**Title of the project:** “Unraveling of stability and activity of different proteins in the presence of nanoparticles”

**Funding Agency: College Research Council (RC) and Institution Innovation Council (IIC), Hansraj College.**

**Sanction Date: 21 on 21 March 2022**

### Awards

- **CSIR-National Eligibility Test CSIR-JRF (December 2011)** in Chemical Sciences and hence awarded **Junior Research Fellowship (2012-2014) and Senior Research Fellowship (2014-2017)** by **Council of Scientific and Industrial Research (CSIR), Delhi, India (AIR: 64)**.
  
- **Best Poster award at Indian Chemical Society Award-2012** in Physical Chemistry section, from **Indian Chemical Society Annual Convention of Chemists, NITTTR, Bhopal, Madhya Pradesh, India.**
- **Best Poster award, 1<sup>st</sup> international conference on recent advances in chemical sciences (ICRACS-2013), Department of Chemistry, Arya P.G. College, Panipat, Haryana, India.**
- **Best Poster award Indian Chemical Society Award-2013** in Physical Chemistry, from **Indian Chemical Society of India** at Annual Convention of Chemists 2013, **Department of Chemistry and Centre for Advanced Studies, Punjab University, Chandigarh, Punjab, India.**
- **Best Poster award 8<sup>th</sup> National Conference on Thermodynamics of Chemical, Biological and Environmental Systems-2013** at **Bhimrao Ambedkar University, Vidya Vihar, Raebarelli Road, Lucknow-226025, Uttar Pradesh.**
- **Young Scientist Award (Professor Santi RanjanPalit Memorial Award) -2014** in Physical Chemistry section, from **Indian Chemical Society of India** at Annual Convention of Chemists, **Department of Chemistry, Kurukshetra University, Kurukshetra, Haryana, India.**
- **Young Scientist Award (Professor Santi RanjanPalit Memorial Award)-2015** in Physical Chemistry section, from **Indian Chemical Society of India** at Annual Convention of Chemists, **JECRC University, Jaipur, Rajasthan, India.**
- Awarded a **Certificate of Merit** from **Daulat Ram COLLEGE, DELHI UNIVERSITY** for Securing **Highest Marks** in B.Sc (H) I<sup>st</sup> Year Chemistry.

- Awarded a **Certificate of Merit** from **Daulat Ram COLLEGE, DELHI UNIVERSITY** for Securing **Highest Marks in aggregate** in Chemistry (H) III<sup>rd</sup> year 2008-2009.
- Awarded a **Certificate of Merit** from **Daulat Ram COLLEGE, DELHI UNIVERSITY** for Securing **Highest Marks** in aggregate all three years combined 2008-2009.
- Smt. Shakuntala Chadha Memorial prize for securing highest marks in B. Sc. Chemistry (H) I<sup>st</sup> & II<sup>nd</sup> year combined 2007-2008.
- Awarded II<sup>nd</sup> Prize in the Intra College Declamation contest on “Tobacco Route –A journey to death” held in 2008.

#### **Professional Affiliations:**

1. Life member in **Indian Biophysical Society**
2. Life member in **Indian Thermodynamic Society**

#### **Oral Presentations in National and International Conferences:**

1. 9<sup>th</sup> National Conference on Thermodynamics of Chemical, Biological, Environmental and Non-Conventional Energy Systems-2014, (TCBNES-14), Oct 17-18, 2014, **Department of Chemistry, Sardar Patel University, Vallabh Vidyanagar-388120, Gujarat, India.**
2. 51<sup>st</sup> Annual Convention of Chemist 2014, December 09-12, 2014, **Department of Chemistry, Kurukshetra University, Kurukshetra-136119, Haryana, India.**
3. 10<sup>th</sup> National Conference on Thermodynamics of Pharmaceutical, Chemical and Biological Systems on November 21-21, 2015, **University Institute of Pharmaceutical Sciences & Department of Chemistry, Panjab University, Chandigarh, India.**
4. RSC workshop on Chemistry for Tomorrow’s World, December 2-3, 2015, **Green Chemistry Network Centre, Delhi University, ManavRachna University, Faridabad & Shiv Nadar University, Great Noida, India.**
5. 3<sup>rd</sup> Indo-Italian Workshop on Electrochemistry for Energy & Health (IIWEc-2015), July 3-4, 2015, **Department of Chemistry, University of Delhi, Delhi-110007, India.**

#### **Poster Presentations in National and International Conferences**

1. An International Conference, Chemical Constellation Cheminar, **Department of Chemistry, Dr B. R. Ambedkar National Institute of Technology, 2012**, Jalandhar, Punjab, India.
2. 49<sup>th</sup> Annual Convention of Chemists, **Indian Chemical Society, National Institute of Technical Teachers' Training and Research, NITTR, 2012**, Bhopal, India.
3. 7<sup>th</sup> National Conference on Thermodynamics of Chemical, Biological and Environmental Processes (TCBEP-2012), **The Indian Thermodynamics Society and Department of Chemistry, Sri Venkateswara University, 2012**, Tirupati, India.
4. 8<sup>th</sup> National Conference on Thermodynamics of Chemical, Biological and Environmental systems (TCBES-2013), **Department of Applied Chemistry, School for Physical Sciences, BabasahebBhim Rao Ambedkar University, 2013**, Lucknow, Uttar Pradesh, India.
5. 1<sup>st</sup> International Conference on Recent Advances in Chemical Sciences (Novel Molecules for Diagnosis and Therapeutics), ICRACS-2013, **Department of Chemistry, Arya Post Graduate College, 2013**, Panipat, Haryana, India.
6. 50<sup>th</sup> Annual Convention of Chemists, **Department of Chemistry and Centre for Advanced Studies in Chemistry, Punjab University, 2013**, Chandigarh, India.
7. Current Research Trends and Developments in Chemical Sciences-2013, CRTDCS-2013, **Department of Chemistry, P. V. K. N. Govt. College, 2013**, Chittoor, India.
8. Mid-Year Symposium, **Chemical Research Society of India (CRSI), Department of Chemistry, National Institute of Technology Karnataka, 2013**, Surathkal, Mangalore, India.
9. 20<sup>th</sup> ISCB International Conference (ISCB-2014), Chemistry and Medicinal Plants in Translational Medicine for healthcare, **Department of Chemistry, University of Delhi, 2014**, Delhi, India.
10. International Conference on "Recent Advances in Nanoscience & Nanotechnology- 2014" (ICRANN-2014), Dec 15-16, 2014, **Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India.**
11. 10<sup>th</sup> Mid-year symposium, **Chemical Research Society Of India, July 23-25, 2015, National Institute of Technology and Bharathidasan University, Tiruchirappalli, Tamil Nadu, India.**
12. National Symposium on Biophysics & Golden Jubilee Meeting of the Indian Biophysical Society, Feb 14-17, 2015, **Centre for Interdisciplinary Research in Basic Science, JamiaMilliaIslamia, New Delhi, India.**

### **Workshops/conferences/symposiums**

1. Participated in one day webinar on Role of ICC and Prevention, Prohibition and Redressal of Sexual Harassment of Workmen at Workplace on May 22, 2020.
2. Participated in the Webinar held on 13-07-2020 from 04:00 p.m. to 05:30 p.m. through video-communication service google meet on "Student Learning Centre: Objectives and Perspectives" organized by Student Learning Centre, IQAC, Hansraj College.
3. Attended the webinar on "**Basic Documentation For Teachers**" June 22th, 2020 organized in collaboration with IQAC, HANSRAJ COLLEGE Under PARAMARSH, a UGC scheme for mentoring NAAC accreditation aspirant institutions to promote quality assurance in higher education.

### **Other activities/responsibilities: (academic/administrative)**

1. Actively participated as a member of organizing committee in the INSPIRE Programme (DST) held at Hansraj college, University of Delhi from 12 DEC 2017 to 16 DEC 2017.
2. Actively participated as a member of organizing committee for the 1st international conference on Integrative Chemistry, Biology and translational medicine organized by the Centre for Global Health, Hansraj college, University of Delhi & Loyola University Chicago Stritch School of Medicine, USA from 25-26 Feb 2019.
3. Organizing Committee at the National Seminar on "Environment and Sustainability in The Third World" organized by Department of Chemistry & IQAC, Hansraj College, University of Delhi on 28 February, 2020.
4. Member of organizing committee of National Conference on New frontiers of biosensing organized by Department of Chemistry Hansraj College, University of Delhi, on April 3, 2021.
5. Convenor of two-days ICT workshop of chemistry laboratory staff organized by Department of Chemistry Hansraj College, University of Delhi, from 6 to 7 October 2021 under IQAC.
6. Coordinator of the webinar on October 23, 2021 through Google Meet organized by the Department of chemistry, Hansraj College together in collaboration with IQAC.
7. Coordinator of the webinar on February 22, 2022 through Zoom Meet organized by the Institution Innovation Council (IIC), Hansraj College together in collaboration with IQAC.



8. Departmental representative of the open book online examination (OBE) Dec-2021.
9. Departmental representative of the open book online examination (OBE) March-2022.
10. Coordinator of Webinar organized by Institution Innovation Council, HRC on 9<sup>th</sup> July 2022 on Journey of cold plasma from laboratory to field: A new opportunity for Start-ups.
11. Coordinator of “ Logo Making Competition “organized by Institution Innovation Council, HRC on 17<sup>th</sup> July 2022 on Innovative Logo for Research and Development Centre.
12. Ambassador of the Institution Innovation Council Program.
13. Active Member of the Criterion VI Committee.
14. Coordinator of “Innovation and Entrepreneurship outreach program organized by Institution Innovation Council, HRC on 18<sup>th</sup> March 2023 on formulation of herbal soaps, herbal colours and hand sanitizers” at Sarvodaya Kanya Vidyalaya, Naraina.
15. Coordinator of the seminar on March 29, 2023 on “Problem solving and Ideation” organized by the Institution Innovation Council (IIC), Hansraj College

**Professional development programmes attended such as workshop, hands-on, training programme, FDPs etc.**

1. Participated in One week Faculty Development Programme on “Mathematica - A System for Modern Technical Computing” (21st– 26th August, 2020) organised by Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi.
2. Participated in workshop cum awareness programme on “Solid Waste Management” organized by Department of Life Sciences Sri Venkateswara College University of Delhi, New Delhi on 16 September 20121.
3. Participated in Three Days Lecture Series on “NEP 2020 : Delhi University Undergraduate Curriculum Framework 2022” (27th -29th January, 2022) organised by Institute of Lifelong Learning, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi.
4. Participated in One week (Online) Faculty Development Programme on “Chemistry and Biology Interface for Scientific Transformations” (25th July - 30th July 2022) organised by SGT University, Gurugram in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi.
5. Successfully completed One Week (Online) International Faculty Development Programme on "Modern scientific technologies – Ways to enhance research skills” (26th December– 31st December, 2022) organised by Mahatma Hansraj Faculty Development Centre Hansraj

College, University of Delhi in collaboration with K.R. Mangalam University, Gurugram & Motilal Nehru College, University of Delhi.

## REFERENCE

1. **Dr. P. Venkatesu**

Associate Professor

Department of Chemistry

University of Delhi

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## Declaration

I hereby declare that all the above furnished details are true to the best of my knowledge and belief.

Date: 1oct 2020

Place: New Delhi

yours sincerely,

**Dr. Indrani**

