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**Publications** – 10 Research Articles in International Journal & 1 Book Chapter.**Citations** – 250

During my Ph.D. I have evaluated the role of crowding on the structure and stability of proteins and interaction of proteins with the crowding agents. I worked under the supervision of Prof. Faizan Ahmad and Prof. Asimul Islam, Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi-110025.

Topic of Research Mechanism of Protein Folding: Effect of Macromolecular Crowding on the Stability Curves of Chemically Induced Denatured Proteins.
Ph.D. Supervisors Prof. Asimul Islam and Prof. Faizan Ahmad (Jamia Millia Islamia)

Educational Qualifications and Awards

Master of Science	M.Sc. in Biotechnology, Aligarh Muslim University, Aligarh. (Awarded DBT scholarship during the whole tenure of M.Sc.)
Bachelor of Science	B.Sc. (Hons.) in Chemistry, Aligarh Muslim University, Aligarh. (Awarded merit scholarship during whole tenure of B.Sc.)
Senior Secondary School	<u>Aligarh Muslim University</u>
Matriculation	Awarded gold medal and certificate of merit for academic excellence with 6 distinctions.

Research Fellowship and Achievements:

- Senior Research Fellowship by MANF, University Grants Commission, Government of India, New Delhi, India (Sept., 2014 – Sep., 2017).
- Junior Research Fellowship by MANF, University Grants Commission, Government of India, New Delhi, India (Sept., 2012 – Sep., 2014).

National Level Test for Research:

- Qualified Graduate Aptitude Test Examination (GATE) - 2012, with All India Rank 189 (99 Percentile), conducted by Indian Institute of Technology, Delhi.

Publications in International Journals:

1. **Nasreen K et. al.** Macromolecular crowding induces molten globule state in the native myoglobin at physiological pH. *International Journal of Biological Macromolecules*. (Impact factor- 8.5)
2. **Nasreen K et. al.** Interactions Under Crowding Milieu: Chemical-Induced Denaturation of Myoglobin is Determined by the Extent of Heme Dissociation on Interaction with Crowders. *Biomolecules*. (Impact factor - 4.8)
3. **Nasreen K et. al.** Crowding Milieu stabilizes apo-myoglobin against chemical-induced denaturation: Dominance of hardcore repulsions in the heme devoid protein. *International Journal of Biological Macromolecules*. (Impact factor – 8.5)
4. **Nasreen K et. al.** Heparin Accelerates the Protein Aggregation via the Downhill Polymerization Mechanism: Multi-spectroscopic Studies to Delineate the Implications on Proteinopathies. *ACS Omega*. (Impact factor – 4.3)
5. **Nasreen K et. al.** Identification of natural compounds as potent inhibitors of SARS-CoV-2 main protease using combined docking and molecular dynamics simulations. *Saudi Journal of Biological Science*. (Impact factor –4.4)
6. **Nasreen K et. al.** Insight into the binding of PEG-400 with eye protein alpha-crystallin: Multi spectroscopic and computational approach: possible therapeutics targeting eye diseases. *Journal of Biomolecular Structure and Dynamics*. (Impact factor – 2.7)
7. **Nasreen K et. al.** Guidelines and Safety Considerations in the Laboratory Diagnosis of SARS-CoV-2 Infection: A Prerequisite Study for Health Professionals. *Risk Management and Healthcare Policy*. (Impact factor – 2.7)
8. **Nasreen K et. al.** Trehalose Stabilizes Lysozyme: A Biophysical and Docking Approach towards Understanding the Mechanism of Co-solute Engineering. *Physical Science and Biophysics Journal*. (Impact factor – 6.7)

9. **Nasreen K et. al.** Mimicking Physiological Cellular Environment of Protein Using Macromolecular Crowding Approach. *Physical Science and Biophysics Journal*. **(Impact factor – 6.7)**
10. **Nasreen K et. al.** Effect of Glucose on Thermal Stability of Myoglobin: A Biophysical and *In silico* Approach towards Stabilization of Protein. *Physical Science and Biophysics Journal*. **(Impact factor – 6.7)**

Total Impact Factor – 56

Book Chapter

1. **Nasreen K et. al.** Chemical-Induced Denaturation of Myoglobin Under Crowded Environment. **Prime Archives in Molecular Biology**.

Conference Proceedings Published:

1. **Nasreen K.,** Hassan M.I., Ahmad F., and Islam A. Myoglobin unfolding in crowded environment: soft interactions overcome the excluded volume effect. **National conference on Biotechnology and Environment SOUVENIR (2017)**.
2. **Nasreen K.**Hassan M.I., Ahmad F., and Islam A. Formation of molten globule in myoglobin under physiological conditions: Possible soft interactions between ficoll 70 and heme moiety. **National Seminar on Biophysics (Biophysika-2017)**.
3. **Nasreen K.** Hassan M.I., Ahmad F., and Islam A. Effect of macromolecular crowding on the structure and stability of apomyoglobin. **National Conference on Protein Structure and Dynamics in Health and Agriculture (2017)**.

Technical Skills:

Biophysical tools and techniques used

- a. Determination of chemical and thermal stability of proteins by circular dichroism (CD) and UV-visible spectroscopy.
- b. Characterization of folding intermediates by spectroscopic techniques.
- c. Ligand binding and protein-ligand interaction by isothermal Calorimetry (ITC).

Oral Presentations at different national and international conferences:

1. Delivered a seminar talk titled as “Myoglobin unfolding in crowded environment: soft interactions overcome the excluded volume effect” at **National Conference on Biotechnology and Environment (2017)**.
2. Delivered a seminar talk titled as “Effect of macromolecular crowding on the structure and stability of apomyoglobin” at **National Conference on Protein Structure and Dynamics in Health and Agriculture (2017)**.
3. Delivered a seminar talk titled as “Formation of molten globule in myoglobin under physiological conditions: Possible soft interactions between ficoll 70 and heme moiety” at **National Seminar on Biophysics (Biophysika-2017)**.
4. Delivered a seminar talk titled as “Macromolecular crowding induces molten globule in Myoglobin” at **National Conference on Interdisciplinary approaches in Chemical Sciences (2015)**.
5. Delivered a seminar talk titled as “Effect of crowding on the stability of proteins” at **International Interdisciplinary Science Conference On Protein Folding and Diseases (2012)**.

Poster Presentation at different national conferences:

1. Presented poster at National Symposium on Biophysics & Golden Jubilee Meeting of the Indian Biophysical Society (2015).
2. Presented poster at National Conference on Recent Trends in Protein Structural Biology (2013).

Participation in national conference:

1. Participated in National Conference on Recent Trends in Molecular Virology (2014).

Membership:

Indian Biophysical Society