

## FACULTY ACADEMIC PROFILE/CV

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Dr. Mossaraf Hossain

M.Sc (Chemistry, Gold Medalist), Ph.D (Chemistry)

Assistant Professor-Assistant Director

### About:

Dr. Mossaraf Hossain is an Assistant Professor-Assistant Director in the Human Resource Development Centre (HRDC), University of North Bengal, India. Dr. Hossain is also associated with chemistry department, University of North Bengal on a par with other faculties of the department (According to UGC-HRDC Guidelines 2019). He received his Bachelor degree (B.Sc honours in chemistry) from Calcutta University and M.Sc from West Bengal State University with organic specialization. He stood first in order of merit of M.Sc examination and he was awarded a medal in recognition in his academic excellence. In the year of 2018 he received his Ph.D degree from University of North Bengal under the supervision of Dr. Ashis Kumar Nanda and he worked on synthetic organic chemistry based on greener approach and their biological applications. After his Ph.D, he joined as Guest Faculty (Presently State Aided College Teacher, approved by Govt. of West Bengal, India) in the department of chemistry, Siliguri College. Thereafter he moved to North Bengal St. Xavier's College affiliated to University of North Bengal and served as Assistant Professor on Contractual basis. In July, 2020 he joined as an Assistant Professor on substantive post in the department of chemistry, Ananda Chandra College, Jalpaiguri. From August 2020 he became as Assistant Professor-Assistant Director in the UGC-HRDC, University of North Bengal. He has been a reviewer of several reputed international journals of American Chemical Society,

Wiley, etc. During his Ph.D, singly he has filed a patent on anti-cancer activity and it was published in May 2018.

### Contact Addresses:

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: Department of Chemistry, University of North Bengal, Raja Rammohunpur, PO-N.B.U., Dist-Darjeeling, West Bengal, Pin-734013, India.

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Google Scholar : <http://scholar.google.co.in/citations?user=nwrw-8wAAAAJ&hl=en>

Discipline : Chemistry

Subject Specialization : Organic Chemistry

### Areas of Research Interest:

- + Synthetic Organic Chemistry.
- + New Reaction Methodologies.
- + Green Chemistry.
- + Inclusion Complexes.
- + N-Heterocyclic Carbene (NHC).
- + Cyclic Alkyl Amino Carbene (CAAC).
- + Coupling Reaction.
- + Catalyst Design and their applications in Synthetic Reactions.
- + Solid state Property.
- + Biochemistry field.
- + Computational study.

**No. of Ph.D. students:** (a) Supervised: Nil (b) Ongoing: Nil

**No. of Publications:** (a) Journal(s): 08 (b) Total Citation: 102  
(c) h-Index: 7 (d) i10-Index: 4 (Google Scholar) (d) Patent: 1 Patent Filed.

## Achievement & Awards:

- ✚ Recipient of Merit-Cum-Means scholarship in M.Sc.
- ✚ Academic Excellence (Gold Medal) in M.Sc.
- ✚ Qualified Graduate aptitude test in Engineering (GATE) in 2014.
- ✚ Junior Research Fellowship funded by UGC, March 2013- March 2015.
- ✚ Senior Research Fellowship funded by UGC, March 2015- March 2018.
- ✚ Best Oral Presentation Award in the International Seminar on "Recent Trends in Chemistry-2019" jointly organized by P.D.Women's College, Jalpaiguri & Indian Chemical Society, Kolkata.
- ✚ Patent filed on Anti-cancer activity on October 2017. Status: Published.

## Research Experiences:

- **Doctor of Philosophy (2013-2018):** Supervisor: Dr. Ashis Kumar Nanda on the thesis title "**SOLVENT FREE SYNTHESIS OF SOME HETEROCYCLES AND THEIR APPLICATIONS**" from University of North Bengal.
- Worked as a Junior Research Fellow: March 2013-March 2015.
- Worked as a Senior Research Fellow: March 2015-March 2018.
- M.Sc Project: Caffeine Extraction from Tea Leaf.

## Teaching Experiences:

- Assistant Professor in the department of chemistry in Siliguri College from 6<sup>th</sup> July 2018 to 24<sup>th</sup> Dec 2018. (Guest Faculty, Presently State Aided College Teacher approved by Govt. of West Bengal)
- Assistant Professor in the department of chemistry in Siliguri College from 2<sup>nd</sup> Jan 2019 to 31<sup>st</sup> Mar 2019. (Guest Faculty, Presently State Aided College Teacher approved by Govt. of West Bengal).
- Assistant Professor as State Aided College Teacher (SACT) approved by Govt. of West Bengal in the department of chemistry in Siliguri College from 1<sup>st</sup> January 2020 to 9<sup>th</sup> July 2020.
- Assistant Professor in the department of chemistry in North Bengal St. Xavier's College from 1st July 2019 to 30<sup>th</sup> June 2020.
- Assistant Professor on **Substantive post** (By CSC) in the department of chemistry in Ananda Chandra College from 10<sup>th</sup> July 2020 to 18<sup>th</sup> August 2020.
- Assistant Professor-Assistant Director in the UGC-Human Resource Development Centre (HRDC) associated with the department of chemistry

(UGC-HRDC Guidelines 2019) in University of North Bengal from 19<sup>th</sup> August 2020 to Continue.

### Teaching Interests:

- ✚ Heterocyclic Chemistry.
- ✚ Photochemistry.
- ✚ Pericyclic Chemistry.
- ✚ Stereochemistry.

### Others Activity: As a reviewer of research papers.

- ✚ Wiley Publications.
- ✚ ACS Publications.

### List of Patent & Publications:

#### Patent:

- ❖ **Inventor: Mossaraf Hossain.**
- ❖ **Title of the Invention:** "Novel 2-acetoxyimidazole derivatives a potent cancer drug to combat multiple cancers and their preparation thereof".
- ❖ **Filing Date: October, 2017.**
- ❖ **Publication Date: 11/05/2018.**

#### Publications:

- ✚ **Mossaraf Hossain\***, Kiran Pradhan and Ashis Kumar Nanda "An expeditious synthetic protocol for chlorination of imidazole N-oxide: Synthesis of 2-chloroimidazoles". *Tetrahedron Letters*, 2017, 58, 3772-3776.
- ✚ **Mossaraf Hossain\***, Ashis Kumar Nanda "Alumina catalyst: Synthesis of novel quinazoline derivatives and their solubility increases through inclusion with  $\beta$ -cyclodextrin". *International journal of Pharmacy and Pharmaceutical Sciences*, 2019, 11, 51-58.
- ✚ **Mossaraf Hossain\***, Ashis Kumar Nanda "A Review on Heterocyclic: Synthesis and Their Application in Medicinal Chemistry of Imidazole Moiety". *Science Journal of Chemistry*, 2018, 6, 83-94.

- ✚ **Mossaraf Hossain**, Renjith Thomas, Y.Sheena Mary, K.S.Resmi, Stevan Armaković, Sanja J. Armaković, Ashis kumar nanda, G.Vijayakumar, C.Van Alsenoy "Understanding reactivity of two newly synthesized imidazole derivatives by spectroscopic characterization and computational study". *Journal of Molecular Structure*, 2018, 1158, 176-196.
- ✚ Renjith Thomas, **Mossaraf Hossain**, Y.Sheena Mary, K.S.Resmi, Stevan Armaković, Sanja J. Armaković, Ashis kumar nanda, Vivek Kumar ranjan, G.Vijayakumar, C.Van Alsenoy "Spectroscopic analysis and molecular docking of imidazole derivatives and investigation of its reactive properties by DFT and molecular dynamics simulations". *Journal of Molecular Structure*, 2018, 1158, 156-175.
- ✚ smiitha m, **Mossaraf Hossain**, Resmi KS, Stevan Armaković, Sanja J. Armaković, rani pavithran, Ashis Kumar Nanda, C.Van Alsenoy, Y Sheena Mary. "Two novel imidazole derivatives - combined experimental and computational study". *Journal of Molecular Structure*, 2018, 1173, 221-239.
- ✚ Kiran Pradhan, Bipranch Kumar Tiwary, **Mossaraf Hossain**, Ranadhir Chakraborty and Ashis Kumar Nanda "A mechanistic study of carbonyl activation under solvent-free conditions: evidence drawn from the synthesis of imidazoles". *RSC Adv.*, 2016, 6, 10743.
- ✚ Bipranch Kumar Tiwary, Somit Dutta, Priyankar Dey, **Mossaraf Hossain**, Anoop Kumar, Sony Bihani, Ashis Kumar Nanda, Tapas Kumar Chaudhuri and Ranadhir Chakraborty "Radical Scavenging Activities of Lagerstroemia speciosa (L.) Pers. Petal Extracts and its hepato-protection in CCl<sub>4</sub> intoxicated mice". *BMC Complementary and Alternative Medicine*, 2017, 17:55. DOI 10.1186/s12906-016-1495-0.

### Conference/Symposium:

### Oral Presentation:

- "A mechanistic insight for the preparation of Imidazole and Imidazole-N-oxide and further its functionalization at C-2 position under solvent free condition." in the **National Seminar** "Frontier in Chemistry –2017" organized

by the Department of Chemistry, NBU and funded by UGC and SAP (DRS-III), held at University of North Bengal, Darjeeling, India, February 20-21, 2017.

- "Solvent-free strategy: Chlorination at C-2 position of Imidazoles Scaffold from Imidazole N-oxides and their antimicrobial activities" in the **National Seminar** on "**Frontiers in Chemistry-2017-18**" organized by the Department of Chemistry, NBU and funded by UGC held at University of North Bengal, Darjeeling, India, September 14, 2017.
- "Alumina catalyst: Synthesis of novel quinazoline derivatives and their solubility increases through inclusion with  $\beta$ -cyclodextrin" in the **International Seminar** on "**Recent Trends in Chemistry-2019**" organized by the Department of Chemistry, P.D. WOMEN'S College in association with INDIAN CHEMICAL SOCIETY, KOLKATA.

#### Poster Presentation:

- "Petal extract of *Lagerstroemia speciosa* possess free radical scavenging activities supporting hepato-protection in  $\text{CCl}_4$  intoxicated mice" in **19th CRSI National Symposium in Chemistry**, held at University of North Bengal, Darjeeling, India, July 13-16, 2016.
- "A new potential motif for supramolecular assembly: 2-Substituted benzo[d][1,3]oxazin-4-ones and study of their effect on antibacterial activity" in the **5<sup>th</sup> Asian Conference on Colloid and Interface Science** organized by the Asian Society for Colloid and Science & Department of Chemistry, University of North Bengal, Darjeeling, India.
- "A potent anti-cancer drug in multiple cancers: Synthesis of 2-acetoxyimidazole derivative from imidazole N-oxide" in the **International Seminar** on "**Frontiers in Chemistry- 2018**" organized by Department of Chemistry, University of North Bengal & CRSI North Bengal Local Chapter, Darjeeling, India.

### Participation in Conferences/Seminar/Workshop:

- ✦ International Seminar on "Recent Trends in Chemistry-2019" organized by the Department of Chemistry, P.D. WOMEN'S College in association with INDIAN CHEMICAL SOCIETY, KOLKATA.
- ✦ National Seminar on "Frontiers in Chemistry- 2015" Organized by Department of Chemistry, University of North Bengal and funded by UGC, SAP (DRS-III).
- ✦ 'Science Academics' Lecture Workshop on Recent developments on the Theoretical and Experimental Aspects of Advanced Material-2015, Organized by Department of Chemistry, University of North Bengal, Darjeeling, West Bengal.
- ✦ National Seminar on "Frontiers in Chemistry- 2014" Organized by Department of Chemistry, University of North Bengal and funded by UGC, SAP (DRS-III).
- ✦ 'Science Academics' Lecture Workshop on Spectroscopy of Emerging Materials, Organized by Department of Chemistry, University of North Bengal, Darjeeling, West Bengal.
- ✦ National Seminar on "Frontiers in Chemistry- 2013" Organized by Department of Chemistry, University of North Bengal and funded by UGC.
- ✦ Workshop on "Diversities and Frontiers in Chemistry-2013" Organized by Jadavpur University, Kolkata & Department of Chemistry, University of North Bengal, Siliguri -State University Network (A project of the West Bengal State Council of Higher Education).
- ✦ 5<sup>th</sup> Asian Conference on Colloid and Interface Science, Organized by jointly Asian Society for Colloid and Science & Department of Chemistry, University of North Bengal, Darjeeling, India.
- ✦ "Interdisciplinary Approach in College-Level Chemistry- 2011" Organized by Department of Chemistry, Ramakrishna Mission Vivekananda Centenary

College, Rahara in collaboration with Department of Chemistry, Mahadevananda Mahavidyalaya, Barrackpore.

- ✚ "New Look in Chemistry in the perspective of greener environment-2010"  
Organized by Department of Chemistry, Acharya Prafulla Chandra College, New Barrackpore, Kolkata & Department of Chemistry, Rishi Bankim Chandra College, Naihati, 24 Parganas North & funded by UGC.