

## FACULTY ACADEMIC PROFILE/CV

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Name : Dr. Mossaraf Hossain  
Qualification : M.Sc (Gold Medalist), Ph.D (Chemistry)  
Subject Specialization: Organic Chemistry  
Designation : Assistant Professor-Assistant Director  
Department : UGC-Human Resource Development Centre (UGC-HRDC) associated with Chemistry  
Institution : University of North Bengal, Siliguri, Darjeeling, West Bengal, 734013

### Education:

- ✚ B.Sc Chemistry (Hons) from Calcutta University, West Bengal
- ✚ M.Sc Organic Chemistry from West Bengal State University, West Bengal (1<sup>st</sup> class 1<sup>st</sup> Gold Medalist)
- ✚ Ph.D Organic Chemistry from University of North Bengal, Siliguri, Darjeeling, West Bengal
- ✚ Post-Doctoral from Calcutta University, West Bengal: Not Continue (Due to joined as an Assistant Professor in College)

### Address for Communication:

Present Address (Office) : **Address: 1 (Mother)**

: UGC-Human Resource Development Centre (HRDC), University of North Bengal, Raja Rammohunpur, PO-N.B.U., Dist-Darjeeling, West Bengal, Pin-734013, India.

: **Address: 2 (Additional)**

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

Tel : +91-9434337820; +91-8327380110

E-Mail : [hossainmossaraf@gmail.com](mailto:hossainmossaraf@gmail.com) (Primary); [adirhrdc@nbu.ac.in](mailto:adirhrdc@nbu.ac.in) ;  
[mossarafchem@nbu.ac.in](mailto:mossarafchem@nbu.ac.in)

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

ORCID : <https://orcid.org/0000-0003-2015-5109>

Web of Science

Researcher ID : [AAJ-7891-2021](#)

Ad Scientific Index 2022:

[https://www.adscientificindex.com/?con=&tit=&country\\_code=&q=darjeeling](https://www.adscientificindex.com/?con=&tit=&country_code=&q=darjeeling)

### 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: **Two**

**No. of Publications:** (a) Published: 08; Submitted: 04; Manuscript under progress: 03 (b) Total Citation: 219; (c) h-Index: 7; (d) i10-Index: 7 (Google Scholar); (d) **Patent: 1 (Granted); Patent No- 388098.**

### **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 on Anti-cancer. Status: **Granted.**

### **Research Project:**

- ✓ Design and Synthesis of Novel Heterodimer of N-Heterocyclic Carbene (NHC) and Cyclic Alkyl Amino Carbene (CAAC) type Scaffolds: C-F and C-H Activated Functionalization Catalysis; Duration: 3 Years (December 2021- December 2024); **Status: Ongoing;** Sponsored by UGC; Sanctioned Amount: 10.0 Lakhs INR.

### **Invited Lecture/Resource Person:**

- Delivered lecture in National Webinar on "Recent Developments in Chemistry" organized by Post Graduate Department of Chemistry, Kokrajhar Govt. College on 23<sup>rd</sup> December, 2021.
- Delivered lectures in various programmes at UGC-Human Resource Development Centre, University of North Bengal.

### **Programmes coordinator/convener/internal coordinator:**

- ✚ Faculty Induction Programme (FIP-02) conducted by UGC-HRDC, NBU (Coordinator)
- ✚ Faculty Induction Programme (FIP-03) conducted by UGC-HRDC, NBU (Coordinator)
- ✚ Refresher Course on Law (Inter-disciplinary) conducted by UGC-HRDC, NBU (Internal Coordinator)

- ✚ Refresher Course on Mathematics conducted by UGC-HRDC, NBU (Internal Coordinator)
- ✚ Refresher Course on Life Science conducted by UGC-HRDC, NBU (Internal Coordinator)
- ✚ Refresher Course on Library & Information Science conducted by UGC-HRDC, NBU (Internal Coordinator)
- ✚ Refresher Course on Chemistry conducted by UGC-HRDC, NBU (Internal Coordinator)
- ✚ Short Term Course-Workshop on **MOOCS**, E-content development and Open Educational Resources (All subjects) conducted by UGC-HRDC, NBU (Coordinator)
- ✚ Short Term Course on Training on Skill Development and Changing Financial Management System for Non-Teachers of Universities and Colleges conducted by UGC-HRDC, NBU (Coordinator)
- ✚ Refresher Course on New Frontiers of Advancement in Natural and Biological Sciences conducted by UGC-HRDC, NBU (Internal Coordinator)
- ✚ Refresher Course on Changing Role of Use of ICT, Open Distance Learning, Open Source Resources and Online Support System in Higher Education and Research conducted by UGC-HRDC, NBU (Internal Coordinator)
- ✚ Faculty Induction Programme (FIP-06) conducted by UGC-HRDC, NBU (Coordinator)
- ✚ Faculty Induction Programme (FIP-07) conducted by UGC-HRDC, NBU (Joint Coordinator)
- ✚ Faculty Induction Programme (FIP-08) conducted by UGC-HRDC, NBU (Coordinator)
- ✚ Refresher Course on Post-Colonial Thought and Indian Literature conducted by UGC-HRDC, NBU (Internal Coordinator)
- ✚ Refresher Course on Sustainability on Earth: Challenges and Mitigation conducted by UGC-HRDC, NBU (Internal Coordinator)

#### **Member/Advisory Committee/Organizing Committee:**

- ✚ Member of Technical Committee for Solid Waste Management, University of North Bengal
- ✚ Advancement of Plant Sciences for Food Diversity and Nutritional Security, Organized by Department of Botany, University of North Bengal in collaboration with UGC-HRDC, university of North Bengal, 30<sup>th</sup> Sep 2021-1<sup>st</sup> Oct 2021

- ✚ One Day International Seminar on Frontiers in Chemistry-2020, Organized by Department of Chemistry, University of North Bengal, 1<sup>st</sup> Oct, 2020
- ✚ International Conference on Confluence of Chemistry & Biology: Exploring New Frontiers, Jointly Organized by Department of Chemistry, University of North Bengal, JIS University & CRSI North Bengal Local Chapter in association with Department of Chemistry, CMS College, Kerala, 12<sup>th</sup> Oct 2020
- ✚ International Seminar on Recent Trends in Chemistry-2020, Organized by Department of Chemistry, University of North Bengal, 16<sup>th</sup> Oct, 2020
- ✚ An Interdisciplinary International Web-seminar on Modern Trends on Humanities, Science & Technology and Social Sciences for Sustainable Development, Organized by Acharya Prafulla Chandra Roy Government College Siliguri, Sep 23-24, 2021
- ✚ Short Term course on Methodology of Effective Teaching-Learning and Research Organized by Sarojini Naidu College for Women, May 20-26, 2022

### 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 College Service Commission) 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:** "The novel compounds to combat multiple cancers and their preparation thereof".
- ❖ **Filing Date: October, 2017.**
- ❖ **Status: **Granted****
- ❖ **Granted Date: **31.01.2022****
- ❖ **Patent No: **388098****

#### 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  $CCl_4$  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.

#### Few 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.