

Curriculum Vitae

BIMALENDU ADHIKARI, Ph.D.

Assistant Professor

Department of Chemistry

National Institute of Technology Rourkela

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Research Area

Bioorganic Chemistry, Peptides, Supramolecular (Polymer) Chemistry, Soft Materials, Gels, Nanomaterials

Experience and Education

<i>June, 2020–Present</i>	Assistant Professor (Level 12), NIT Rourkela, Odisha, India
<i>Dec, 2019–May, 2020</i>	Assistant Professor (Level 11), NIT Silchar, Assam, India
<i>July, 2018–Nov, 2019</i>	Assistant Professor (Level 10), DDU Gorakhpur University, UP, India
<i>Nov, 2016–July, 2018</i>	INSPIRE Faculty, IISER Mohali, India
<i>May, 2015–Nov, 2016</i>	JSPS Postdoctoral Fellow, Supervisor- Prof. Shiki Yagai, Chiba University, Japan
<i>Oct, 2012–Apr, 2015</i>	Postdoctoral Research Fellow, Supervisor- Prof. Heinz-Bernhard Kraatz, University of Toronto, Canada
<i>July 2007– Oct, 2012</i>	Ph.D. Degree in Chemistry, Supervisor- Prof. Arindam Banerjee, Indian Association for the Cultivation of Science, Degree awarded by Jadavpur University, Kolkata, India.
<i>July, 2005–Apr, 2007</i>	M. Sc. Degree in Chemistry (Specialization in Organic Chemistry), University of Calcutta, India.
<i>July, 2002–Apr, 2005</i>	B. Sc. (Honors) Degree in Chemistry, Bagnan College, University of Calcutta, India.

Award and Academic Distinctions

- CSJ Best Oral Presentation Award 2016
- DST-INSPIRE Faculty Fellow Award, 2016
- JSPS Postdoctoral Fellowship for Overseas Researcher, 2014, Japan
- NET JRF: CSIR, New Delhi, India, 2007 (Screened for SPM fellowship interview)
- GATE: Graduate Aptitude Test in Engineering, IIT, India, 2007 (All India Rank-40)
- JAM: Joint Admission Test, IIT, India, 2005 (All India Rank-206)
- Best Graduate of Bagnan College 2005, University of Calcutta, India

Sponsored/ Consultancy Projects

Project 1:

Title: Dynamic Peptide Libraries (Principal Investigator)

Funding Agency: DST

Value: 35 Lakh INR

Period: 5 years

Project 2:

Title: Devising Light-Powered Far-From-Equilibrium Supramolecular Polymers

Funding Agency: SERB

Value: 30 Lakh INR

Period: 3 years

Publication

Total Publication: 40, Average Impact Factor: 6.2, Total Citations: 2650, h-index: 22

23 papers as main (first/corresponding) author

<https://scholar.google.ca/citations?user=eQTn02UAAAAJ&hl=en>

1. M. Lone, N. Sahu, R. K. Roy, B. Adhikari,* Introduction of Ferrocene as a Facilitator for the Construction of Supramolecular Polymer, *Chemistry - A European Journal*, (2022), e202202711.
2. B. Adhikari,* N. Sahu, COVID-19 into Chemical Science Perspective: Chemical Preventive Measures and Drug, *Chemistry Select* 2365-6549, (2021), 6, 2010 –2028. DOI: 10.1002/slct.202100127.
3. Supramolecular polymers, N. Sahu, I. Mohanta, A. K. Srivastava, B. Adhikari*, Book Name: Supramolecular Chemistry in Corrosion and Biofouling Protection, CRC Press, ISBN: 9780367769024, (2021), DOI: 10.1201/9781003169130. (Book Chapter)
4. Supramolecular Polymers Capable of Controlling Their Topology, S. Yagai, Y. Kitamoto, S. Datta, B. Adhikari, *Accounts of Chemical Research* ISSN: 1520-4898 (2019) 52, 1325-1335 (selected as Supplementary Cover Art) DOI: 10.1021/acs.accounts.8b00660 (Impact factor: 20.9)
5. Photoresponsive Circular Supramolecular Polymers: Topological Trap and Photoinduced Ring-opening Elongation. B. Adhikari, K. Aratsu, J. Davis, S. Yagai, *Angewandte Chemie, International Edition*, ISSN: 1521-3773 (2019), 58, 3764–3768, DOI: 10.1002/anie.201811237. (I.F. 12.102)
6. Photomodulation of Foldability in Supramolecular Polymers, B. Adhikari, Y. Yamada, M. Yamauchi, K. Wakita, X. Lin, K. Aratsu, T. Ohba, T. Karatsu, M. Hollamby, N. Shimizu, H. Takagi, R. Haruki, S. Adachi, S. Yagai, *PF Highlights*, 2018, 31, DOI: www2.kek.jp/imss/pf/science/publ/pfhl/2017/17hl2_3.
7. Kinetic Control Over the Topology of Curved Supramolecular Polymers, S. Yagai, M. Yamauchi, B. Adhikari, Kinetic Control in Synthesis and Self-Assembly, ISBN: 978-0-12-812126-9, (2019), 231, DOI: 10.1016/B978-0-12-812126-9.00011-0. (Book Chapter, publisher: Elsevier)
8. Water-Induced Self-Assembly of an Amphiphilic Perylene Bisimide Dyad into Vesicles, Fibers, Coils, and Rings, M. Ogasawara, X. Lin, H. Kurata, H. Ouchi, M. Yamauchi, T. Ohba, T. Kajitani,

T. Fukushima, M. Numata, R. Nogami, B. Adhikari, S. Yagai, *Material Chemistry Frontier*, ISSN: 2052-1537, (2018), 2, 171, DOI: 10.1039/c7qm00494j. (Impact factor: 6.8)

9. Hydrogen-Bonded Rosettes Comprising π -conjugated Systems as Building Blocks for Functional One-dimensional Assemblies, B. Adhikari, X. Lin, M. Yamauchi, H. Ouchi, K. Aratsu, S. Yagai, *Chemical Communications*, ISSN: 1359-7345, (2017), 53, 9663-9683. DOI: 10.1039/C7CC04172A. (Impact factor: 6.290, Citations: 21)
10. Helically Chiral Peptides Containing Ferrocene-1,1'-diamine Scaffold as a Turn Inducer. M. Kovačević, I. Kodrin, S. Roca, K. Molčanov, Y. Shen, B. Adhikari, H.-B. Kraatz, Barišić, L. *Chemistry-A European Journal*, ISSN: 1521-3765, (2017), 23, 10372-10395 DOI: 10.1002/chem.201701602. (Impact factor: 5.160)
11. Light-Induced Unfolding and Refolding of Supramolecular Polymer Nanofibres, B. Adhikari, Y. Yamada, M. Yamauchi, K. Wakita, X. Lin, K. Aratsu, T. Ohba, T. Karatsu, M. Hollamby, N. Shimizu, H. Takagi, R. Haruki, S. Adachi, S. Yagai, *Nature Communications*, ISSN: 2041-1723 (2017), 8, 15254, DOI: 10.1038/ncomms15254. (Impact factor: 12.353, Citations: 23)
12. Supramolecular Polymerization of Supermacrocycles: Effect of Molecular Conformations on Kinetics and Morphology, M. Yamauchi, B. Adhikari, D. D. Prabhu, X. Lin, T. Karatsu, T. Ohba, N. Shimizu, H. Takagi, R. Haruki, S.-i. Adachi, T. Kajitani, T. Fukushima, S. Yagai, *Chemistry-A European Journal*, ISSN: 1521-3765, (2017), 23, 5270, DOI: 10.1002/chem.201700459. (Impact factor: 5.160, Citations: 2)
13. Photoresponsive Supramolecular Copolymers from Diarylethene-pervlene Bisimide Hydrogen Bonded Complexes, B. Adhikari, T. Suzuki, L. Xu, M. Yamauchi, T. Karatsu, S. Yagai, *Polymer*, ISSN: 0032-3861, (2017), 128, 356, DOI: 10.1016/j.polymer.2017.01.025. (Impact factor: 3.483)
14. Phototriggered Supramolecular Polymerization of Barbituric Acid Rosette, M. Yamauchi, N. Kanao, B. Adhikari, T. Karatsu, S. Yagai, *Chemistry Letters*, ISSN: 0366-7022, (2016), 46, 111, DOI: 10.1246/cl.160940. (Impact factor: 1.550; Citations: 2)
15. Supramolecular Polymerization of Hydrogen-Bonded Rosettes with Anthracene Chromophores: Regioisomeric effect on Nanostructures, D.D. Prabhu, K. Aratsu, M. Yamauchi, X. Lin, B. Adhikari, S. Yagai, *Polymer Journal*, ISSN: 0032-3896, (2016), 49, 189, DOI: 10.1038/pj.2016.94. (Impact factor: 2.170; Nature Sister journal)
16. Amino Acid Chirality and Ferrocene Conformation Guided Self-Assembly and Gelation of Ferrocene-Peptide Conjugates, B. Adhikari,* C. Singh, A. Shah, A. J. Lough, H.-B. Kraatz,* *Chemistry-A European Journal*, ISSN: 1521-3765, (2015), 21, 11560, DOI: 10.1002/chem.201501395. (Impact factor: 5.160; Citations: 22, As a corresponding author)
17. Electron Transfer in Peptides, A. Shah, B. Adhikari, S. Martic, A. Munir, S. Shahzad, K. Ahmad, H.-B. Kraatz, *Chemical Society Reviews*, ISSN: 0306-0012, (2015), 44, 1015, DOI: 10.1039/C4CS00297K. (Impact factor: 40.182, Citations: 50)

18. Development of Photocatalysts for Selective and Efficient Organic Transformations, S. Munir, D. Dionysiou, S. Khan, S. Shah, B. Adhikari, A. Shah, *Journal of Photochemistry and Photobiology B: Biology*, ISSN: 1011-1344, (2015), 148, 209, DOI: 10.1016/j.jphotobiol.2015.04.020. (Impact factor: 3.165, Citations: 8)
19. Sensitive Electrochemical Detection of Salmonella with Chitosan-Gold Nanoparticles Composite Film, C. Xiang, R. Li, B. Adhikari, Z. She, Y. Li, H.-B. Kraatz, *Talanta*, ISSN: 0039-9140, (2015), 140, 122, DOI: 10.1016/j.talanta.2015.03.033. (Impact factor: 3.545, Citations: 33)
20. Bis-amino Acid Derivatives of 1,1'-Ferrocenedicarboxylic Acid: Structural, Electrochemical, and Metal Ion Binding Studies, B. Adhikari, A. J. Lough, B. Barker, A. Shah, C. Xiang, H.-B. Kraatz, *Organometallics*, ISSN: 0276-7333, (2014), 33, 4873, DOI: 10.1021/om500032p. (Impact factor: 3.662, Citations: 10)
21. Self-assembly of Guanosine and Deoxy-Guanosine into Hydrogels: Monovalent Cation Guided Modulation of Gelation, Morphology and Self-Healing Properties, B. Adhikari,* A. Shah, H.-B. Kraatz,* *Journal of Materials Chemistry B*, ISSN: 2050-7518, (2014), 2, 4802, DOI: 10.1039/C4TB00702F. (Impact factor: 4.776; Citations: 40; As a corresponding author; Selected as cover picture of the issue)
22. Biological Activity, pH Dependent Redox Behavior and UV-Vis Spectroscopic Studies of Naphthalene Derivatives, A. Rauf, H. Subhan, B. Adhikari, R. Abbasi, K. Mazhar, I. Z. Qureshi, A. H. Shah, A. Badshah, A. Shah, *Journal of Photochemistry and Photobiology B: Biology*, ISSN: 1011-1344, (2014), 140, 173, DOI: 10.1016/j.jphotobiol.2014.07.010. (Impact factor: 3.165, Citations: 0)
23. Synthesis, Spectroscopic Characterization and pH Dependent Electrochemical Fate of Two Non-Ionic Surfactants, A. Munir, I. Ullah, A. Shah, U. A. Rana, S.U.D. Khan, B. Adhikari, S.M. Shah, S. B. Khan, H.-B. Kraatz, *Journal of The Electrochemical Society*, ISSN: 0013-4651, (2014), 161, H885, DOI: 10.1149/2.0391414jes. (Impact factor: 3.662; Citations: 3)
24. pH-Dependent Redox Mechanism and Evaluation of Kinetic and Thermodynamic Parameters of a Novel Anthraquinone, K. Ahmad, A. H. Shah, B. Adhikari, U. A. Rana, C. Vijayaratnam, N. Muhammad, S. Shujah, A. Rauf, H. Hussain, A. Badshah, R. Qureshi, H.-B. Kraatz, A. Shah, *RSC Advances*, ISSN: 2046-2069, (2014), 4, 31657, DOI: 10.1039/C4RA04462B. (Impact factor: 2.936; Citations: 8)
25. Detailed Electrochemistry of the Environmental Toxin Ethylene Diamine, A. Munir, A. Shah, A. H. Shah, U. A. Rana, B. Adhikari, S. B. Khan, R. Qureshi, H.-B. Kraatz, *Journal of The Electrochemical Society*, ISSN: 0013-4651, (2014), 161, H370, DOI: 10.1149/2.044406jes. (Impact factor: 3.662; Citations: 9)

26. Synthesis, Spectroscopic Characterization, pH Dependent Redox Mechanism and DNA Binding Behavior of Chlorohydroxyaniline Derivatives, S. Shahzad, A. Shah, M. Sirajuddin, B. Adhikari, K. Ahmad, U. A. Rana, S. Ali, R. Qureshi, H.-B. Kraatz, *RSC Advances*, ISSN: 2046-2069, (2014), 4, 22299, DOI: 10.1039/C4RA03434A. (Impact factor: 2.936; Citations: 4)
27. Redox-Triggered Changes in the Self-Assembly of a Ferrocene-Peptide Conjugate, B. Adhikari, H.-B. Kraatz, *Chemical Communications*, ISSN: 1359-7345, (2014), 50, 5551, DOI: 10.1039/C3CC49268K. (Selected as a cover picture of the issue; Impact factor: 6.290; Citations: 35)
28. Ferrocene-Tryptophan Conjugate: An Example of a Redox Controlled Reversible Supramolecular Nanofiber Network, B. Adhikari, R. Afrasiabi, H.-B. Kraatz, *Organometallics*, ISSN: 0276-7333, (2013), 32, 5899, DOI: 10.1021/om4004779. (Impact factor: 3.662; Citations: 24)
29. A Gel Based Novel Trihybrid System Containing Nanofibers, Nanosheets and nanoparticles: Modulation of rheological Property and Catalysis, J. Nanda, A. Biswas, B. Adhikari, A. Banerjee, *Angewandte Chemie, International Edition*, ISSN: 1521-3773, (2013), 52, 5041, DOI: 10.1002/anie.201301128. (Impact factor: 12.102; Citations: 113)
30. Catalytic Properties of Graphene-metal Nanoparticle Hybrid Prepared Using an Aromatic Amino Acid as the Reducing Agent, B. Adhikari, A. Banerjee, *Materials Chemistry and Physics*, ISSN: 0254-0584, (2013), 139, 450, DOI: 10.1016/j.matchemphys.2013.01.020. (Impact factor: 2.210; Citations: 13)
31. Graphene Oxide-Based Hydrogels to Make Metal Nanoparticle-Containing Reduced Graphene Oxide-Based Functional Hybrid Hydrogels, B. Adhikari, A. Biswas, A. Banerjee, *ACS Applied Materials and Interfaces*, ISSN: 1521-3773, (2012), 4, 5472, DOI: 10.1021/am301373n. (Impact factor: 8.097; Citations: 131)
32. Formation of Hybrid Hydrogels Consisting of Tripeptide and Different nanoparticle Capped Ligands: Modulation of the Mechanical Strength of Gel phase Materials, J. Nanda, B. Adhikari, S. Basak, A. Banerjee, *Journal of Physical Chemistry B*, ISSN: 1520-6106, (2012), 116, 12235, DOI: 10.1021/jp306262t. (Impact factor: 3.146; Citations: 41)
33. Graphene Oxide-Based Supramolecular Hydrogels for Making Nanohybrid Systems with Au Nanoparticles, B. Adhikari, A. Biswas, A. Banerjee, *Langmuir*, ISSN: 0743-7463, (2012), 28, 1460, DOI: 10.1021/la203498j. (Impact factor: 3.789; Citations: 79)
34. Self-Assembling Peptides: From Molecules to Nanobiomaterials, B. Adhikari, A. Banerjee, *Journal of Indian Institute of Science*, ISSN: 0019-4964, (2011), 91, 471, DOI: not available. (Impact factor: 0.857; Citations: 12; Review Article)
35. Short Peptide Based Hydrogels: Incorporation of Graphene into the Hydrogel, B. Adhikari, A. Banerjee, *Soft Matter*, ISSN: 1744-6848, (2011), 7, 9259, DOI: 10.1039/C1SM06330H. (Impact factor: 3.889; Citations: 119)

36. Pyrene-Containing Peptide-Based Fluorescent Organogels: Inclusion of Graphene into the Organogel, B. Adhikari, J. Nanda, A. Banerjee, *Chemistry - A European Journal*, ISSN: 1521-3765, (2011), 17, 11488, DOI: 10.1002/chem.201101360. (Impact factor: 5.160; Citations: 127)
37. Multicomponent Hydrogels from Enantiomeric Amino Acid Derivatives: Helical Nanofibers, Handedness and Self-Sorting, B. Adhikari, J. Nanda, A. Banerjee, *Soft Matter*, ISSN: 1744-6848, (2011), 7, 8913, DOI: 10.1039/C1SM05907F. (Impact factor: 3.889; Citations: 102)
38. Short-Peptide-Based Hydrogel: A Template for the *In Situ* Synthesis of Fluorescent Silver Nanoclusters by Using Sunlight, B. Adhikari, A. Banerjee, *Chemistry - A European Journal*, ISSN: 1521-3765, (2010), 16, 13698, DOI: 10.1002/chem.201001240. (Impact factor: 5.160; Citations: 149)
39. Facile Synthesis of Water-Soluble Fluorescent Silver Nanoclusters and Hg^{II} Sensing, B. Adhikari, A. Banerjee, *Chemistry of Materials*, ISSN: 1520-5002, (2010), 22, 4364, DOI: 10.1021/cm1001253. (Impact factor: 9.890; Citations: 290)
40. Self-Assembling Tripeptide Based Hydrogels and Their Use in Removal of Dyes from Wastewater, B. Adhikari, G. Palui, A. Banerjee, *Soft Matter*, ISSN: 1744-6848, (2009), 5, 3452, DOI: 10.1039/B905985G. (Impact factor: 3.889; Citations: 179)

Teaching Experience

- Teaching at IISER Mohali: UG (BTech) Chemistry (CY1101, CY1170), Spectroscopic Methods of Analysis (CY4104), Special Topics in Organic Synthesis (CY6107), Functional Group Estimation Laboratory (CY2704), Chemical Biology Laboratory (CY3703) (*with good students' feedback*)
- Teaching at IISER Mohali: Bio-Organic Chemistry (CHM606, (for MS-PhD), Basic Organic Chemistry CHM212 (for BS-MS) (*with good students' feedback*)
- Teaching at DDU Gorakhpur University: Organic Spectroscopy (PG level), Supramolecular Chemistry (PG level), Basic Organic Chemistry (UG level), Polymer Chemistry (UG level) (*Teaching was much appreciated by students and senior faculties of the department*)
- Teaching at NIT Silchar: Chemistry (UG level)
- Teaching Assistant at University of Toronto: Advance Organic Chemistry (CHMD92, for 4th year undergraduate students), Summer 2013, Summer 2014.

Presentation (Talk) in Conference/Symposium

- Adhikari, B. From Bio-Organic to Supramolecular Polymer Chemistry: A Research Overview, Webinar on Frontiers in Chemical Sciences, NIT Rourkela, July 06-10, 2020 (40 mins talk)
- Adhikari, B. Role of Chemistry to Fight COVID-19, Webinar on "Leveraging Science and Technology to Combat Covid-19", The Dean Office, Faculty of Science, DDU Gorakhpur University, Gorakhpur, May 23-24, 2020 (30 mins talk)

- Adhikari, B. Safety in Chemistry Laboratory, DDU Gorakhpur University, Aug 08, 2019, (30 mins talk)
- Adhikari, B. Supramolecular Polymers of Small Organic Building Blocks: From Molecules to Materials, National Conference on Smart Materials and Sustainable Technologies 2019, Feb23-24, 2019, DDU Gorakhpur University (20 mins talk)
- Adhikari, B. Light Induced Realization of Direct Folding-Unfolding in Supramolecular Polymer at Microscopic Level, Exotic-Self-Organized Materials, Japan, Nov 07-2015 (20 mins talk).
- Adhikari, B. Light-Driven Folding-Unfolding in Supramolecular Polymer, (Presentation No.: 3F3-0), 96th CSJ annual meeting, Japan, March 26th, 2016 (20 mins). (CSJ Best Presentation Award 2016)
- Adhikari, B.; Yagai, S. Folding-unfolding of supramolecular polymer by light, (Presentation No.: C2-020-019) MRS 2016, Dec19-22, 2016 Japan (20 mins talk)