

Curriculum Vitae

BIMALENDU ADHIKARI, Ph.D.

Associate Professor

Department of Chemistry

National Institute of Technology Rourkela

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Profile Summary

Passionate researcher in Supramolecular and Bioorganic Chemistry, recognized with prestigious awards such as the CRSI Young Scientist Award, JSPS Postdoctoral Fellowship, and DST-INSPIRE Faculty Award. Published over 45 research articles in reputed journals (Avg. IF: ~7), with an h-index of 24 (i100-index: 12) and total citations exceeding 3200. Finds immense joy in teaching, consistently receiving high student feedback.

Featured in the 'Introducing... Profile' of *Angewandte Chemie*. [Author Profile](#)

Academic & Research Experience

- **Associate Professor (Level 13A2)**, NIT Rourkela, Odisha, India (July 2024–Present)
- **Assistant Professor (Level 12)**, NIT Rourkela, Odisha, India (June 2020–June 2024)
- **Assistant Professor (Level 11)**, NIT Silchar, Assam, India (Dec 2019–May 2020)
- **Assistant Professor (Level 10)**, DDU Gorakhpur University, UP, India (July 2018–Nov 2019)
- **INSPIRE Faculty**, IISER Mohali, India (Nov 2016–July 2018)
- **JSPS Postdoctoral Fellow**, Chiba University, Japan (May 2015–Nov 2016)
- **Postdoctoral Research Fellow**, University of Toronto, Canada (Oct 2012–Apr 2015)

Education

- **Ph.D.**, Indian Association for the Cultivation of Science (July 2007–Oct 2012)
- **M.Sc. in Chemistry**, University of Calcutta, India (July 2005–Apr 2007)
- **B.Sc. (Honors) in Chemistry**, University of Calcutta, India (July 2002–Apr 2005)

Awards & Academic Distinctions

- **CRSI Young Scientist Award**, 2023
- **DST-INSPIRE Faculty Fellow Award**, 2016
- **JSPS Postdoctoral Fellowship for Overseas Researchers**, 2014, Japan
- **NET JRF (CSIR)**, 2007 (Screened for SPM fellowship interview)
- **GATE**, 2007 (All India Rank: 40)

- **JAM**, 2005 (All India Rank: 206)
- **Best Graduate** of Bagnan College, 2005, University of Calcutta

Research Grants & Sponsored Projects

- **Dynamic Peptide Libraries** (PI) – DST, INR 35 Lakh (5 years)
- **Light-Powered Supramolecular Polymers** (PI) – SERB, INR 30 Lakh (3 years)

Publications

Total Publications: 45 | **Avg. IF:** ~7 | **Citations:** 3206 | **h-index:** 24 | **i-100-index:** 12

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

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=35089912700>

Selected Publications:

1. Cu(II)-Induced G-quartets: Robust Supramolecular Polymers Exhibiting Heating-Induced Aqueous Phase Transitions into Gel or Precipitate
N. Sahu, C. Guchhait, I. Mohanta, V. Suriyaa and B. Adhikari*
Angewandte Chemie International Edition, 2025, 64, e202417508.
<https://doi.org/10.1002/ange.202417508>
(IF: 16.1, Citations: 0)
2. Ag⁺-Induced Supramolecular Polymers of Folic Acid: Reinforced by External Kosmotropic Anions Exhibiting Salting Out
I. Mohanta, N. Sahu, C. Guchhait, L. Kaur, D. Mandal and B. Adhikari*
Biomacromolecules, 2024, 25, 6203–6215.
<https://doi.org/10.1021/acs.biomac.4c01063>
(IF: 5.5, Citations: 3)
3. A Spherical Superhydrophobic Activated Carbon Catalyst for Biodiesel Production - Exploring Process Efficiency, Kinetics, Thermodynamics and Life Cycle Cost Analysis
A. Das, C. Guchhait, B. Adhikari*, K. Saikia, D. Shi*, H. Li and L. Rokham*
Advanced Functional Materials, 2024, 34, 2406262.
<https://doi.org/10.1002/adfm.202406262>
(IF: 19, Citations: 3)
4. Ferrocene: an exotic building block for supramolecular assemblies
C. Guchhait, Suriyaa V., N. Sahu, S. D. Sarkar and B. Adhikari*
Chemical Communications, 2023, 59, 14482-14496.
<https://doi.org/10.1039/D3CC03659F>
(IF: 4.3, Citations: 6)
5. Multicomponent Low Molecular Weight Gels and Gelators
S. D. Sarkar, C. Guchhait and B. Adhikari*
Royal Society of Chemistry (Book Chapter), ISBN: 978-1-83767-006-2.
<https://doi.org/10.1039/9781837670055>
6. Introduction of Ferrocene as a Facilitator for the Construction of Supramolecular Polymers
M. U. Lone, N. Sahu, R. K. Roy and B. Adhikari*

- Chemistry - A European Journal*, 2022, 29, e202202711.
<https://doi.org/10.1002/chem.202202711>
(IF: 4.3, Citations: 4)
7. COVID-19 into Chemical Science Perspective: Chemical Preventive Measures and Drug
B. Adhikari* and N. Sahu
Chemistry Select, 2021, 6, 2010–2028.
<https://doi.org/10.1002/slct.202100127>
(IF: 2.1, Citations: 9)
8. Supramolecular polymers
N. Sahu, I. Mohanta, A. K. Srivastava and B. Adhikari*
CRC Press (Book Chapter), ISBN: 9780367769024.
<https://doi.org/10.1201/9781003169130>
9. Supramolecular Polymers Capable of Controlling Their Topology
S. Yagai, Y. Kitamoto, S. Datta and B. Adhikari*
Accounts of Chemical Research, 2019, 52, 1325-1335.
<https://doi.org/10.1021/acs.accounts.8b00660>
(IF: 18.3, Citations: 160)
10. Photoresponsive Circular Supramolecular Polymers: Topological Trap and
Photoinduced Ring-opening Elongation
B. Adhikari, K. Aratsu, J. Davis, S. Yagai
Angewandte Chemie International Edition, 2019, 58, 3764–3768.
<https://doi.org/10.1002/anie.201811237>
(IF: 16.6, Citations: 49)
11. 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, 2017, 53, 9663–9683.
<https://doi.org/10.1039/C7CC04172A>
(IF: 4.9, Citations: 95)
12. 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, 2017, 23, 10372–10395.
<https://doi.org/10.1002/chem.201701602>
(IF: 4.3, Citations: 34)
13. 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, 2017, 8, 15254.
<https://doi.org/10.1038/ncomms15254>
(IF: 16.6, Citations: 120)
14. 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, 2017, 23, 5270.
<https://doi.org/10.1002/chem.201605873>
(IF: 4.3, Citations: 23)

- 15.** Photoresponsive Supramolecular Copolymers from Diarylethene-pervlene Bisimide Hydrogen Bonded Complexes
B. Adhikari, T. Suzuki, L. Xu, M. Yamauchi, T. Karatsu, S. Yagai
Polymer, 2017, 128, 356.
<https://doi.org/10.1016/j.polymer.2017.01.025>
(IF: 2.8; Citations: 10)
- 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, 2015, 21, 11560.
<https://doi.org/10.1002/chem.201501395>
(IF: 4.3; Citations: 48)
- 17.** Electron Transfer in Peptides
A. Shah, B. Adhikari, S. Martic, A. Munir, S. Shahzad, K. Ahmad, H.-B. Kraatz
Chemical Society Reviews, 2015, 44, 1015.
<https://doi.org/10.1039/C4CS00297K>
(IF: 46.2, Citations: 142)
- 18.** 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, 2015, 140, 122.
<https://doi.org/10.1016/j.talanta.2015.03.033>
(IF: 6.1, Citations: 105)
- 19.** 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, 2014, 33, 4873.
<https://doi.org/10.1021/om500032p>
(IF: 2.8, Citations: 24)
- 20.** 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, 2014, 2, 4802.
<https://doi.org/10.1039/C4TB00702F>
(IF: 7.0; Citations: 94, Selected as cover picture of the issue)
- 21.** Redox-Triggered Changes in the Self-Assembly of a Ferrocene-Peptide Conjugate
B. Adhikari, H.-B. Kraatz
Chemical Communications, 2014, 50, 5551.
<https://doi.org/10.1039/C3CC49268K>
(IF: 4.9; Citations: 72)
- 22.** Ferrocene-Tryptophan Conjugate: An Example of a Redox Controlled Reversible Supramolecular Nanofiber Network
B. Adhikari, R. Afrasiabi, H.-B. Kraatz
Organometallics, 2013, 32, 5899.
<https://doi.org/10.1021/om4004779>
(IF: 2.8; Citations: 37)

- 23.** 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, 2013, 52, 5041.
<https://doi.org/10.1002/anie.201301128>
(IF: 16.6; Citations: 157)
- 24.** 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, 2012, 4, 5472.
<https://doi.org/10.1021/am301373n>
(IF: 9.5; Citations: 205)
- 25.** 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, 2012, 116, 12235.
<https://doi.org/10.1021/jp306262t>
(IF: 7.0; Citations: 72)
- 26.** Graphene Oxide-Based Supramolecular Hydrogels for Making Nano-hybrid Systems with Au Nanoparticles
B. Adhikari, A. Biswas, A. Banerjee
Langmuir, 2012, 28, 1460.
<https://doi.org/10.1021/la203498j>
(IF: 3.9; Citations: 96)
- 27.** Short Peptide Based Hydrogels: Incorporation of Graphene into the Hydrogel
B. Adhikari, A. Banerjee
Soft Matter, 2011, 7, 9259.
<https://doi.org/10.1039/C1SM06330H>
(IF: 3.4; Citations: 184)
- 28.** Pyrene-Containing Peptide-Based Fluorescent Organogels: Inclusion of Graphene into the Organogel
B. Adhikari, J. Nanda, A. Banerjee
Chemistry - A European Journal, 2011, 17, 11488.
<https://doi.org/10.1002/chem.201101360>
(IF: 4.3; Citations: 176)
- 29.** Multicomponent Hydrogels from Enantiomeric Amino Acid Derivatives: Helical Nanofibers, Handedness and Self-Sorting
B. Adhikari, J. Nanda, A. Banerjee
Soft Matter, 2011, 7, 8913.
<https://doi.org/10.1039/C1SM05907F>
(IF: 3.4; Citations: 154)
- 30.** 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, 2010, 16, 13698.
<https://doi.org/10.1002/chem.201001240>
(IF: 4.3; Citations: 209)

31. Facile Synthesis of Water-Soluble Fluorescent Silver Nanoclusters and Hg^{II} Sensing

B. Adhikari, A. Banerjee

Chemistry of Materials, 2010, 22, 4364.

<https://doi.org/10.1021/cm1001253>

(IF: 8.6; Citations: 424)

32. Self-Assembling Tripeptide Based Hydrogels and Their Use in Removal of Dyes from Waste-Water

B. Adhikari, G. Palui, A. Banerjee

Soft Matter, 2009, 5, 3452.

<https://doi.org/10.1039/B905985G>

(IF: 3.4; Citations: 265)

Teaching Experience

- **NIT Rourkela:** (Course ratings on a scale of 3)

Theory Courses – Organic Chemistry, Spectroscopic Methods of Analysis (CY4104, rating: 2.71), Applied Chemistry (CY1003, rating: 2.64), Chemistry (CY1101, rating: 2.53), Special Topics in Organic Synthesis (CY7107, rating: 2.86)

Laboratory Courses – Chemistry Laboratory (CY1170, rating: 2.38), Functional Group Estimation Laboratory (CY2704, rating: 2.74), Chemical Biology Laboratory (CY3703, rating: 2.74), Organic Compounds Preparations Laboratory (CY4701, rating: 2.52)

- **NIT Silchar:** Engineering Chemistry
- **DDU Gorakhpur University:** Spectroscopy, Basic Organic Chemistry
- **IISER Mohali:** Bio-Organic Chemistry (CHM606), Basic Organic Chemistry (CHM212)
- **University of Toronto:** Advanced Organic Chemistry Laboratory (CHMD92)

Research Supervision

Ph.D. Students: 6 (ongoing)

Talks & Presentations in Conferences/Symposia

- March 2024 – *International Conference for Functional Materials and Polymer Technology (ICFMPT-2024)*, ICT-Mumbai, IOC Bhubaneswar Campus
Invited Talk: *Exotic Supramolecular Polymers*
- January 2024 – *International Conference on Functional Materials-2024 (ICFM-2024)*, IIT Kharagpur
Invited Talk: *Exotic Supramolecular Polymers*
- July 2023 – *International Conference on Chemistry and Applications of Soft Materials*, CSIR-NIIST, Thiruvananthapuram
- July 2020 – *Webinar on Frontiers in Chemical Sciences*, NIT Rourkela
Invited Talk: *From Bio-Organic to Supramolecular Polymer Chemistry: A Research Overview*
- May 2020 – *Webinar on “Leveraging Science and Technology to Combat Covid-19”*, Faculty of Science, DDU Gorakhpur University
Invited Talk: *Role of Chemistry to Fight COVID-19*

- August 2019 – *Conference on Safety Measures and Hazards in Chemistry Laboratories*, DDU Gorakhpur University
Invited Talk: *Safety in Chemistry Laboratory*
- February 2019 – *National Conference on Smart Materials and Sustainable Technologies 2019*, DDU Gorakhpur University
Invited Talk: *Supramolecular Polymers of Small Organic Building Blocks: From Molecules to Materials*
- March 2016 – *96th CSJ Annual Meeting*, Japan
Talk: *Light-Driven Folding-Unfolding in Supramolecular Polymer*
- December 2016 – *The Materials Research Society of Japan (MRS 2016)*, Japan
Talk: *Folding-Unfolding of Supramolecular Polymer by Light*
- November 2015 – *Conference on Exotic-Self-Organized Materials*, Japan
Talk: *Light-Induced Realization of Direct Folding-Unfolding in Supramolecular Polymer at Microscopic Level*

Workshop/Conference Organized (as Coordinator)

- Workshop on Modeling and Synthesis: Molecules to Macromolecules (MSMM-2023)
25–29 September 2023
- Inspiration Workshop on Robotics, AI, SEM, XRD, BET, HRMS, SCXRD, LN & Other CRF Equipment
18 October 2023
- Conference on Advancement and Innovation in Science and Engineering Fields
12–13 June 2024
- Inspiration Workshop on Robotics, AI, SEM, XRD, BET, HRMS, SCXRD, LN & Other CRF Equipment (*Series 3*)
15 July 2024
- Inspiration Workshop on Robotics, AI, SEM, XRD, BET, HRMS, SCXRD, LN & Other CRF Equipment (*Series 4*)
16 July 2024
- Five-Day Skill Development Workshop & Training on Microscopy, Spectroscopy, TEM, SEM & XRD (MICSPEC-2024)
10–17 July 2024
- International Conference on Recent Innovation and Development in Material Science and Engineering Fields (RIDMSEF-2025)
5–6 March 2025

Professional Links

- Facebook: <https://www.facebook.com/bimalendu.adhikari.5>
- Twitter/X: <https://twitter.com/BadhikariLab>

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