

Curriculum Vitae

Dr. Bijnaneswar Mondal

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Assistant Professor, Department of Chemistry, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur, Chhattisgarh - 495009, India.

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Personal Details:

Name	Bijnaneswar Mondal
Date of Birth	5 th April, 1992
Nationality	Indian
Language	English, Hindi, Bengali
Contact No	9482946044 / 9110231700



Academic Profile:

Oct 2019 – Present	Assistant Professor Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India
Aug 2014 – July 2019 <i>Thesis Defense Date</i> 10 th Dec, 2019	Ph. D. (Supramolecular Chemistry) Indian Institute of Science, Bangalore, India Thesis Supervisor – Prof. Partha Sarathi Mukherjee Thesis Title – “ <i>Covalent organic cages: templates for metal nanoparticles, heterogeneous catalysis and solid-state photochromism</i> ”
Aug 2012 – July 2014	M. Sc. (Chemistry) Indian Institute of Technology Madras, Chennai, India Project Supervisor – Prof. Sundargopal Ghosh Project Title – “ <i>A new looks to heterometallic borides</i> ”
Aug 2009 – July 2012	B. Sc. (Chemistry) Siksha Bhavana, Visva Bharati University, Santiniketan, West Bengal, India

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Research Experience:

- Design and synthesis of various discrete and functionalized porous organic cages.
- Exploration of covalent organic cages as alternate template to prepare size-tuned metal nanoparticles.
- Experimental analysis of cage supported nanoparticles as heterogeneous catalyst in various organic transformation.
- Functionalization of organic cage to incorporate multi-stimuli responsive character in solid and solution state.
- Development of cationic organic cages for selective molecular recognition and their facile separation.
- Assessment of the stability of meta-stable photochromic molecules inside the porous molecular barrels.
- Morphological modulation of porous organic materials by altering building block units.

Instrument Expertise:

- Solution phase NMR Spectroscopy and Mass Spectrometry.
- Solid and solution phase IR, UV-vis and Fluorescence Spectroscopy
- SEM, TEM, XPS, and ICP-MS analysis of Metal Nanomaterials
- SC-XRD, PXRD, DSC, TGA and BET Surface area measurement.

Research Interest:

- ❖ Functional Organic Cages
- ❖ Selective Separation
- ❖ Molecular Sensing
- ❖ Heterogeneous Catalysis
- ❖ Guest Encapsulation
- ❖ Photo-mediated Catalysis

Additional Recognitions:

CSIR NET: June 2013, All India Rank 54

GATE: March 2014, All India Rank 319

Best PhD Thesis Award: Prof. S. Soundarajan Gold Medal from Inorganic and Physical Chemistry Department, IISc, Bangalore for the 2019-2020 academic year

Teaching Experience:

Teaching Duration: 6 years (Department of Chemistry, Guru Ghasidas University)

Course Code	Course Title	Class
CYUATT2	Organic Chemistry-I	UG

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CYUALT2	Organic Chemistry Practical	UG
CYUBTT2	Organic Chemistry-II	UG
CYUBLT2	Organic Chemistry Practical	UG
CYUCTT2	Organic Chemistry-III	UG
CYUCLT2	Organic Chemistry Practical	UG
CYPATT3	Organic Chemistry-I	PG
CYPALT3	Organic Chemistry Practical-I	PG
CYPBTT3	Organic Chemistry - II	PG
CYPBTT3	Organic Chemistry Practical-II	PG
CYPBTD3	Chemistry of Heterocycles	PG
CYPDTD3	Organic Spectroscopy for Structural Elucidation	PG
CH-R2	Formation of Carbon-Carbon bonds via organometallic reagents	PhD

Student Guidance:

Research Student (PhD Thesis): 3 (*ongoing*)

Project Student (MSc Dissertation): 28 (*completed*)

Research Publications:

1. S. Sharma, A. Kumari, S. K. Behera, D. Prasad, G. Maity, A. K. Singh, **B. Mondal** and S. Banerjee, *Unlocking Dual Functionality: Novel Ag-doped CuCo₂O₄ for Electro-catalytic and Photochemical Oxidation Reactions*. *New J. Chem.*, 2025. DOI: [10.1039/D5NJ01593F](https://doi.org/10.1039/D5NJ01593F) (Impact factor 2.5, No of Citations: 2, ISSN No. 1369-9261).
2. A. Kumari, **B. Mondal** and S. Banerjee, *Self-Assembled Flake-Like Pd-Doped CuCo₂O₄ Nanomaterial for Efficient Microwave-Assisted Cyanation of Aryl Halides Using K₄[Fe(CN)₆]*. *ChemistrySelect*, 2025, doi.org/10.1002/slct.202503970. (Impact factor 2.1, No of Citations: 2, ISSN No. 2365-6549).
3. S. Dhibar, A. Dey, **B. Mondal**, K. Karmakar, A. Roy, S. Bhattacharjee, A. Trivedi, A. Mohan, R. Saha, P. Chatterjee, A. Mondal, T. O. Ajiboye, and B. Saha, *Development of two novel supramolecular metallogels of Mn(II) and Zn(II)-ion derived from L-(+) tartaric acid for fabricating light responsive junction type semiconducting diodes with non-ohmic conduction mechanism*. *Journal of Sol-Gel Science and Technology*, 2025, doi.org/10.1007/s10971-025-06673-0. (Impact factor 2.6, No of Citations: 0, ISSN No. 0928-0707).

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4. S. Dhibar, A. Mohan, K. Karmakar, **B. Mondal**, A. Roy, S. Babu, P. Garg, P. Ruidas, S. Bhattacharjee, S. Roy, A. Bera, S. J. Ray, P. Predeep, and B. Saha, *Novel supramolecular luminescent metallo gels containing Tb(III) and Eu(III) ions with benzene- 1,3,5-tricarboxylic acid gelator: advancing semiconductor applications in microelectronic devices*. *RSC Adv.*, 2024, 14, 12829-12840. (Impact factor 3.9, No of Citations: 0, ISSN No. 2046-2069).
5. S. Dhibar, A. Roy, T. Sarkar, P. Das, K. Karmakar, S. Bhattacharjee, **B. Mondal**, P. Chatterjee, K. Sarkar, S. J. Ray, and B. Saha, *Rapid Semiconducting Supramolecular Mg(II)-Metallohydrogel: Exploring Its Potential in Nonvolatile Resistive Switching Applications and Antiseptic Wound Healing Properties*. *Langmuir*. 2023, 40, 179. (Impact factor 3.7, No of Citations: 0, ISSN No. 1520-5827).
6. K. Karmakar, A. Roy, S. Dhibar, S. Majumder, S. Bhattacharjee, **B. Mondal**, S.K. M. Rahaman, R. Saha, S. J. Ray, and B. Saha, *Instantaneous Gelation of a Self-Healable Wide-Bandgap Semiconducting Supramolecular Mg(II)-Metallohydrogel: An Efficient Nonvolatile Memory Design with Supreme Endurance*. *ACS Appl. Electron. Mater.* 2023, 5 (6), 3340-3349. (Impact factor 4.5, No of Citations: 2, ISSN No. 2637-6113).
7. R. Saha, **B. Mondal** and P. S. Mukherjee, *Molecular Cavity for Catalysis and Formation of Metal Nanoparticles for Use in Catalysis*. *Chem. Rev.* 2022, 122 (14), 12244-12307. (Impact factor 72.1, No of Citations: 20, ISSN No. 0009-2665).
8. P. Bhandari, **B. Mondal**, P. Howlader and P. S. Mukherjee, *Face-Directed Tetrahedral Organic Cage Anchored Palladium Nanoparticles for Selective Homocoupling Reaction*. *Eur. J. Inorg. Chem.* 2021, 2022 doi.org/10.1002/ejic.202100986 (Impact factor 2.5, No of Citations: 2, ISSN No. 1434-1948).
9. **B. Mondal**, P. Bhandari and P. S. Mukherjee, *Nucleation of Tiny Silver Nanoparticles Using a Tetrafacial Organic Molecular Barrel for Potential Use in Visible Light Triggered Photocatalysis*. *Chem.-Eur. J.* 2020, 26, 15007-15015. (Impact factor 5.1, No of Citations: 3, ISSN No. 0947-6539)
10. R. Modak, **B. Mondal**, P. Howlader and P. S. Mukherjee, *Self-assembly of a "Cationic-Cage" via formation of Ag-carbene bonds followed by imine condensation*. *Chem. Commun.* 2019, 55, 6711-6714. (Impact factor 7.2, No of Citations: 14, ISSN No. 1359-7345).

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11. **B. Mondal**, and P. S. Mukherjee, *Cage Encapsulated Gold Nanoparticles as Heterogeneous Photocatalyst for Facile and Selective Reduction of Nitroarenes to Azo Compounds*. *J. Am. Chem. Soc.* 2018, 140 (39), 12592-12601. (Impact factor 16.4, No of Citations: 131, ISSN No. 0002-7863).
12. P. Howlader, **B. Mondal**, P. C. Purba, E. Zangrando and P. S. Mukherjee, *Self-Assembled Pd(II) Barrels as Containers for Transient Merocyanine Form and Reverse Thermochromism of Spiropyran*. *J. Am. Chem. Soc.* 2018, 140 (25), 7952-7960. (Impact factor 16.4, No of Citations: 109, ISSN No. 0002-7863).
13. **B. Mondal**, A. K. Ghosh and P. S. Mukherjee, *Reversible Multistimuli Switching of a Spiropyran-Functionalized Organic Cage in Solid and Solution*. *J. Org. Chem.* 2017, 82 (15), 7783-7790. (Impact factor 4.3, No of Citations: 36, ISSN No. 0022-3263).
14. K. Acharyya, A. Chowdhury, **B. Mondal**, S. Chakraborty and P. S. Mukherjee, *Building Block Dependent Morphology Modulation of Cage Nanoparticles and Recognition of Nitroaromatics*. *Chem.-Eur. J.* 2017, 23 (35), 8482-8490. (Impact factor 5.1, No of Citations: 10, ISSN No. 0947-6539).
15. **B. Mondal**, K. Acharyya, P. Howlader and P. S. Mukherjee, *Molecular cage impregnated palladium nanoparticles: efficient, additive-free heterogeneous catalysts for cyanation of aryl halides*. *J. Am. Chem. Soc.* 2016, 138 (5), 1709-1716. (Impact factor 16.4, No of Citations: 172, ISSN No. 0002-7863)
16. B. Mondal, **B. Mondal**, K. Pal, B. Varghese and S. Ghosh, *An electron-poor dimolybdenum triple-decker with a puckered [B₄Ru₂] bridging ring is an oblate-closo cluster*. *Chem. Commun.* 2015, 51 (18), 3828-3831. (Impact factor 7.2, No of Citations: 21, ISSN No. 1359-7345)
17. K. Yuvaraj, D. K. Roy, C. Arivazhagan, **B. Mondal** and S. Ghosh, *Chemistry of early and late transition metallaboranes: synthesis and structural characterization of periodinated dimolybdaborane [(Cp*Mo)₂B₄H₃I₅]*. *Pure Appl. Chem.* 2015, 87 (2), 195-204. (Impact factor 5.3, No of Citations: 5, ISSN No. 334545).
18. V. Anju, S. K. Barik, **B. Mondal**, V. Ramkumar and S. Ghosh, *Metallaboranes from Metal Carbonyl Compounds and Their Utilization as Catalysts for Alkyne Cyclotrimerization*. *ChemPlusChem* 2014, 79 (4), 546-551. (Impact factor 3.2, No of Citations: 19, ISSN No. 2192-6506)
19. K. Yuvaraj, D. K. Roy, V. Anju, **B. Mondal**, B. Varghese and S. Ghosh, *Mixed-metal chalcogenide tetrahedral clusters with an exo-polyhedral metal fragment*. *Dalton*

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Trans. 2014, 43 (45), 17184-17190. (Impact factor 4.6, No of Citations: 4, ISSN No. 1477-9226)

Book chapter published:

1. Book Chapter on “**Cavity-Controlled Supramolecular Catalysis**” in the book named as “**Supramolecular Coordination Complexes: Design, Synthesis, and Applications**” by Elsevier Publishers, 2023, Pages 387-420, <https://doi.org/10.1016/B978-0-323-90582-4.00015-4> (ISBN: 9780-3239-05824).
2. Book Chapter on “**Transition Metal Oxides and Their Thermoelectric Properties (ZnO, In₂O₃, TiO₂, SnO₂, etc.)**” in the book named as “**Metal oxide-based thermoelectric materials**” by Elsevier Publishers, 1st Edition - March 25, 2025 (ISBN: 9854-4256-05258)

Research Grant:

1. **Project Title:** ANRF - Inclusivity Research Grant, [File No. ANRF/IRG/2024/001761/CS]
Project Description: Tailoring Porous Organic Cages as Potential Host for Catalysis under Photolytic and Microwave Conditions
Funding Agency & Principal investigator: ANRF India & Dr. B. Mondal (Sole)
Amount & Duration: Rs. 61.5 lakhs for three years (March 2025 - March 2028)
2. **Project Title:** UGC Start-Up Grant [File No. F.30-551/2021(BSR)]
Project Description: Design and synthesis of porous covalent organic cages for molecular recognition and catalysis
Funding Agency & Principal investigator: UGC India & Dr. B. Mondal (Sole)
Amount & Duration: Rs. 10 lakhs for two years (Nov 2021 - Oct 2023)

Academic Responsibility:

- ❖ Departmental Coordinator for National Service Scheme (NSS) committee of Guru Ghasidas Vishwavidyalaya, Bilaspur (CG).

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- ❖ Warden of Swami Vivekanand Boys Hostel, Guru Ghasidas Vishwavidyalaya, Bilaspur (CG).
- ❖ Departmental Representative for MOOCs Implementation committee of Guru Ghasidas Vishwavidyalaya, Bilaspur (CG).
- ❖ Representative from School of Physical Science for Skill Development Cell of Guru Ghasidas Vishwavidyalaya, Bilaspur (CG).
- ❖ Core Committee Member for Technological Enabled Centre of Guru Ghasidas Vishwavidyalaya, Bilaspur (CG).
- ❖ Member for Supervision & Monitoring of Fund of DST-FIST proposal committee from 2022 to 2024.
- ❖ Departmental committee member for Criteria-5 data collection of NAAC in 2020-2023
- ❖ Committee Member of Category-3 (Graduation Outcomes) for NIRF data collection process in 2023.
- ❖ Member of departmental admission committee (UG and PG) from 2020 to 2024.
- ❖ Committee member for Physical Verification of Assets (Consumable & Non-consumable) for Biotechnology & Forensic Science department from 2023-2024.
- ❖ Scrutiny committee member for the faculty recruitment of physical education department in 2021
- ❖ Scrutiny committee member for the faculty recruitment of Civil Engineering, Chemical Engineering, Mechanical Engineering, Information Technology Engineering, Computer Science Engineering, Industrial & Production Engineering, Electronics & Communication Engineering department in 2023.
- ❖ Member, Organizing conferences/seminars/workshops, GGV, Bilaspur (C.G.), India
- ❖ Active committee member for organizing "Science Logo Competition" in National Science Day Celebration organized by Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India, held on 28th February, 2022.

Conferences & Faculty Programs:

1. Invited Speaker at International Conference on "*Green Technologies, Environment and Drug Discovery (ICGTEDD-2025)*" organized by Green Chemistry Network Centre Chapter & Department of Chemistry, Akal University, Talwandi Sabo, India held on September 3rd-5th, 2025.

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2. Invited Speaker at International Seminar on *“Recent Advances in Chemical Sciences (RACS2025)”* organized by Department of Chemistry, Visva-Bharati University, Santiniketan-731235, West Bengal, India held on March 08, 2025.
3. Invited Speaker at National Seminar on *“Recent advances in Drug discovery and its biochemical applications”* organized by School of Chemistry, G.M. University, Sambalpur, Odissa, India held on November 30, 2024.
4. Attended the **Refreshers Course (RC)** on *“Interdisciplinary Life Sciences”* organized by UGC-MMTTC, Guru Ghasidas Vishwavidyalaya, during 14th Oct – 26th Oct 2024.
5. Coordinator of **“Scientific & Technical Outreach Programme”** jointly organized by Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) & Bhabha Atomic Research Centre (BARC), Mumbai, India held during August 05, 2024.
6. Participate in One-Day User Awareness Program on **“ORCID and INFLIBNET Services for Scholarly Communities”** organized by INFLIBNET) Centre, Gandhinagar (Gujrat) and Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India on July 02, 2024.
7. Organizing secretary at one day Lecture Workshop on **“Chemistry of Macromolecules and Energy Sustainability”** organized by Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India held during April 30, 2024.
8. Co-Organizing secretary at National Conference on *“Emerging Smart Materials in Chemical Science (ESMCS-2024)”* jointly organized by Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) & Indira Gandhi National Tribal University, Amarkantak (M.P.) & Indian Photobiology Society, Kolkata, India held during March 20-21, 2024.
9. Attended the **“NEP-Orientation & Sensitization Programme”** organized by UGC-MMTTC, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) during March 04-13, 2024.
10. Chairing & Judging session at National Seminar on the account’s celebration of *“National Science Day and the Indian Photobiology Society Diamond Jubilee young scientist conclave – 2024”* organized by Jadavpur University, Kolkata, India held on March 1-2, 2024.

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11. Oral Presentation (Flash Talk) at National Conference on “*Advanced Functional Materials for Sustainable Applications (AFMSA-2024)*” organized by Shiv Nadar Institution of Eminence, Greater Noida, UP - 201314, India held on February 9-10, 2024.
12. Organizing secretary at National Symposium on “*The Nobel Prize in Chemistry 2023: Discovery and Synthesis of Quantum Dots*” by Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India, held during 21st - 22nd November, 2023.
13. Attended the Refreshers Course (RC) on “*Synchronizing Devices and Impacts of Internal Safety Under Cyber Security*” organized by UGC-Human Resource Development Centre, Guru Ghasidas Vishwavidyalaya, during 08th September 2023 to 22th September 2023.
14. Participate in Two-day Workshop on “*Research Proposal Writing*” organized by Indian Knowledge system, Ministry of Education and Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India during 3rd - 4th February 2023.
15. Poster Presentation at 19th International Conference on “*Modern Trends in Inorganic Chemistry (MTIC-XIX)*” by Banaras Hindu University, Varanasi (UP), India during 15th - 17th December, 2022.
16. Participate in One day National Webinar on “*IP Awareness/Training program*” under National Intellectual Property awareness mission organized by Intellectual Property Office, India on 22 November 2022.
17. Speaker in seven days’ workshop on “*Material Characterization Techniques*” under DST funded STUTI program organized by Department of Pure and Applied Physics, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India during 1st - 7th November 2022.
18. Participate in Three-day Online Workshop on “*NEP - 2020*” organized by UGC-Human Resource Development Centre, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India during 27th - 30th June 2022.
19. Participate in Two-day International Lectures-Workshop on “*Recent Advances in Interdisciplinary Chemical Sciences*” organized by Mahila Mahavidyalaya, Banaras Hindu University, Varanasi, India, held on 24 - 25th May, 2022.

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20. Participate in One day National Webinar on "*IP Awareness/Training program*" under National Intellectual Property awareness mission organized by Intellectual Property Office, India on 12th April, 2022.
21. Participate in National Webinar on "*Consultancy in Chemical Sciences: Opportunities and Challenges*" organized by Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India, held on 27th February, 2022.
22. Participate in One day international-level webinar on "*Polymer Chemistry Research Advancements in recent Years*" (PCRA'Y-2022)" organized by Department of Chemistry, Ramananda College, Bishnupur, West Bengal held on 4th January, 2022.
23. Participate in One day national-level webinar on "*Recent Advances in Materials and Nanoscience*" (RAMAN-2021) organized by Department of Chemistry, Ramananda College, Bishnupur, West Bengal held on 12th November, 2021.
24. Attended the **Faculty Induction Program (FIP)** organized by UGC-Human Resource Development Centre, Guru Ghasidas Vishwavidyalaya, during 13th September 2021 to 13th October 2021.
25. Participate in National Webinar on "*Role of Physical Sciences in Combating COVID-19 Pandemic*" organized by School of Physical Science, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India, held on August 11, 2021.
26. Participate in International Webinar on "*Emerging Areas in Chemical Sciences: Opportunities and Challenges (EACS-2020)*" organized by Department of Chemistry, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India, held on August 12-13, 2020.
27. Participate in International Virtual Conference on "*Emerging Smart Materials in Applied Chemistry (ESMAC-2020)*" organized by Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, Odisha, India, held on August 10-12, 2020.
28. Participate in International Virtual Conference on "*Emerging Frontiers for Healthcare and Delivery (EFHD-2020)*" organized by Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, Odisha, India, held on September 12-14, 2020.
29. Participate in International Virtual Conference on "*Frontiers in Manufacturing Technology (FMT-2020)*" organized by Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, Odisha, India, held on October 13-17, 2020.

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30. Oral Presentation in Virtual National Conference on “*Catalysis and Photocatalysis for Clean Energy (CPCE-2020)*” organized by NIT Jamshedpur, Jharkhand, India, held on October 9-10, 2020.
31. Participate in International Virtual Conference on “*Advances in Functional Materials (AFM-2020)*” organized by Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, Odisha, India, held on August 26-28, 2020.
32. Participate in Online International Webinar on “*Circular Economy, Climate and Environment Relations on Post Covid-19 -Challenges and Opportunities*” organized by Government Naveen College, Bhairamgarh, (C.G), India held on July 26, 2020.
33. Poster Presentation at 14th International Symposium on Macrocyclic and Supramolecular Chemistry (**ISMSC-2019**), Lecce, Italy held on June 2 – 6, 2019.
34. Oral Presentation at IPC Day Symposium February 14-15, 2019, IPC Department, IISc, Bangalore, India.
35. Poster Presentation at IPC Day Symposium February 15-16, 2018, IPC Department, IISc, Bangalore, India.
36. Poster Presentation at 16th CRSI National Symposium in Chemistry (**NSC-16**), December 7 – 9, 2014, IIT Bombay, India.

Referees:

Dr. Partha Sarathi Mukherjee	Dr. Sundar Gopal Ghosh	Dr. Rahul Banerjee
Professor	Professor	Professor
IPC Department	Chemistry Department	Chemical Sciences Department
Indian Institute of Science	IIT Madras	IISER Kolkata
Bangalore – 560 012	Chennai – 600 036	West Bengal - 741 246
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Declaration:

I hereby declare that all the information's given above are true and completely best of my knowledge.

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Date: 05th September, 2025

Place: GGV, Bilaspur (C.G.)

B Mondal