Dr. Mrigendra Dubey

Present address:
Department of Metallurgical Engineering and Materials Science (MEMS),
Indian Institute of Technology Indore, India
mdubey@iiti.ac.in
mrigendradubey@gmail.com
+91-9044413301; +91-7324-306542
Homepage: https://drdubey.wixsite.com/iiti

Date of birth: 12-12-1985 **Sex:** Male **Nationality**: Indian **Marital status:** Married

Experience/Education:

Associate Professor (Feb 2022- Continue)	Materials Science	**I**ndian **I**nstitute of **T**echnology **I**ndore, **I**ndia
Assistant Professor (May 2017- Feb 2022)	Materials Science	**I**ndian **I**nstitute of **T**echnology **I**ndore, **I**ndia
DST- INSPIRE Faculty (Jan 2015- April 2017)	Chiral Inorganic Materials Chemistry	**I**ndian **I**nstitute of **T**echnology (**BHU**), **V**aranasi, **I**ndia
UGC-DSK Post Doctoral Fellow (Dec 2012- Dec 2014)	Supramolecular Material Chemistry	**B**anaras **H**indu **U**niversity, **V**aranasi, **I**ndia
Post Doctoral Fellow (Aug 2011- Jul 2012)	Supramolecular Material Chemistry	**I**nstitute of **C**hemistry, **A**cademia **S**inica, **T**aipei, **T**aiwan
Ph.D. (July 2011)	Inorganic Chemistry	**I**ndian **I**nstitute of **T**echnology, **G**uwahati, **I**ndia
M.Sc. (with Merit) (2005)	Inorganic Chemistry	**U**niversity of **A**llahabad, **A**llahabad, **I**ndia.

Honors /Awards:

- **I**nvited **T**eacher, **I**ndian **A**cademy of **S**ciences, **B**angalore- 2019.
- **Y**oung **S**cientist **A**ward, **I**nternational **A**cademy of **P**hysical **S**ciences, **A**llahabad, **I**ndia- 2017.
- **I**nvited **S**cientific **V**isitor at **E**NS-**L**yon, **U**niversity of **R**ennes, **G**renoble and **B**urgundy, **F**rance – 2017.
- **B**est **P**oster **A**ward in **F**rontiers of **O**rganometallic **C**hemistry (FOMC) - 2016.
- **I**nvited **R**esearch **V**isitor in **F**rance (**C**NRS- **R**ennes, **P**aris VI University and **E**NS-**L**yon) - 2016.
- **I**nvited **R**esearch **V**isitor in **U**niversity of **R**ennes and **E**NS **L**yon, **F**rance- 2015.
- **D**ST- **INSPIRE F**aculty **A**ward, Department of Science & Technology, New Delhi, India- 2014.
- Paper selected for **V**ice **C**hancellor's **A**ward for **E**xcellence in **R**esearch at **BHU** Varanasi - 2014.
- Dr. D. S. **K**othari **P**ostdoctoral **F**ellowship of **U**niversity **G**rants **C**ommission - 2012.
- Qualified **G**raduate **A**ptitude **T**est in **E**ngineering (**GATE**) - 2006.
- **M**erit **C**ertificate in M.Sc. - 2005.

Research Interests:

- Development of multifunctional Soft Materials (Metallogels)
- Metallogels and conductive device fabrication
- Synthesis of Stimuli-responsive Smart Materials
- Superhydrophobic Carbon Dots for coating and security applications
- Nanofabrication and nanocatalysis
- Development of Superabsorbent Materials for application in the field of agriculture
- Molecular Engineering for tuning Aggregation Induced Emission and Charge transfer properties.
- Development of Materials for Corrosion protection and monitoring.

Present Designation:

Associate Professor at **I**ndian **I**nstitute of **T**echnology **I**ndore, India

Soft Materials research group:

Teachers Associateship for Research Excellence (TARE):

Ongoing: Dr. Prakash Chandra (Assistant Professor, Bundelkhand University)

Post-Doctoral Fellow:

Completed: Dr. Manish Kumar Dixit, National Post-Doctoral Fellow, DST, New Delhi

PhD Students:

Completed: 06 (Dr. C. **M**ahendar, **Dr. M. K. D**ixit**, Dr. V**inay **K. P**andey**, Dr. S**iddhartha **S**uman, Dr. **Y**eeshu **K**umar and Dr. **S**hrisnath **U**padhyay**);**
Ongoing: **03** (1. Ms. **M**oupia **M**ukherjee, 2. **B**harath **K**umar **S**ahu and 3. **V**aishali **Y**adav)

Postgraduate Students:

Completed: 13 (1. Avi Jain, 2. Hariom Sharma, 3. Harsh Vaid, 4. Ashok Kumar, 5. Rhishikesh Darshan, 6. Shardeshu Pandey, 7. Mr. Vishal Prajapati, 8. Mr. Divyanshu Gupta, 9. Mr. Neelesh Singh 10. Ms. Neha Shakya, 11. Mr. Piyush Meena, 12. Praveen Rautela, 13. Shubham Garg,)
Ongoing: 01 (1. Dharmendra Kumar)

Undergraduate Students:

Completed: 12 (Mr. Jay Shukla, Mr. Indraneel S. Deshpande, Mr. Sai Murali, Mr. Ritesh Prasad, Ayush Singhal, Mr. Aman Vaishnav, Mr. Saksham Yashpal, Mr. Sanu Prajapati, Mr. Godi S Karthikeya, Hemant Kumar, Ishan Bharti, Saurav Yadav and C. Karan Kumar)
Ongoing:

Invited Lectures/meeting:

- Invited Scientific visit to France (Rennes, Lille, Toulouse, Strasbourg) 30 May - 12 June 2024.
- Invited Lecture at Lalit Narayan University (ICNT 2024) on 29th July 2024.
- Invited Lecture at Bundelkhand University, Jhansi on 5th April, 2024.
- Invited Lecture and session chair at 2nd International Conference on Frontiers in Chemical Science, KITS, Coimbatore, October 26-27, 2023.
- Participated Shiksha Samagam Event Pragati Maidan, New Delhi under EBSB, Ministry of Education, GoI.
- Refresher Course at Dr. HSG University Sagar- September 2023.

- Refresher Course at DAVV Indore- July 2023.
- QIP at IIT Indore- March 2022.
- Karyashala, Accelerate Vigyan, IIT Indore- January 2022.
- Emerging Technologies in Chemistry, CMP Degree College, Allahabad- March 2021
- Recent advancement in Structural and Geotechnical Engineering, IIT Indore- March 2021
- GYAN GANGA PROGRAMME at Government College Kota-Feb 2021
- 'Materials Characterization Techniques' at IIT Indore, 22nd-27th March 2021
- Short Term Training Program, NIT Raipur- January 2021
- Quality Improvement Programme (Advanced Materials Science) at IIT Indore- 2020
- Quality Improvement Programme (Failure Analysis) at IIT Indore- 2020
- Quality Improvement Programme (Corrosion Engineering) at IIT Indore- 2020.
- Don Bosco College Tura, Meghalaya- 2020.
- VBS University, Jaunpur (UP)-2019.
- **I**nvited **T**eacher, **I**ndian **A**cademy of **S**cience, **B**angalore organised at BHU Varanasi- 2018.
- **I**ndo-**F**rench workshop at IIT Indore- 2018.
- **L**ecture **S**eries in **F**rance at **E**NS-**L**yon, **U**niversity of **R**ennes, **G**renoble and **B**urgundy – 2017.
- **C**ONAIPS XX, **O**smania **U**niversity, **H**yderabad, **I**ndia, **J**uly- 2017.
- **U**PMC-Paris, **E**NS **L**yon, **C**NRS-**U**NIVERSITÉ **D**E **R**ENNES-1 – 2016.
- **U**NIVERSITÉ **D**E **R**ENNES 1 and **C**NRS-**E**NS **L**yon, **F**rance – 2015.
- **48th A**nnual **C**onvention of **C**hemists, **I**ndia at ***U**niversity of **A**llahabad, **A**llahabad, **I**ndia-2011.*

Conference/Workshop Organized:

- Organised industrial visit (Vacmet Polymer, Ujjaini, Dhar) for 45 students- November 2023.
- Organised Eye and Ortho Camp for Baigram village under Unnat Bharat Abhiyan, EBSB, IIT Indore.
- Organised visit of Manipur Delegates under Yuva Sangam Pragram, Ministry of Education, GoI.
- Organised visit to Manipur with 45 delegates from MadyaPrasesh under Yuva Sangam Pragram, Ministry of Education, GoI.
- Lecture series (149) Rastriya Aawiskar Abhiyan, EBSB January 2021- January 2024.
- TEQIP FDP (Advances in Corrosion Science and Engineering) at IIT Indore- 2020.
- TEQIP FDP (Advanced Technology for Integrated Computational Materials Engineering Education) at IIT Indore- 2020.
- QIP STC (Advanced Technology in Materials Engineering) at IIT Indore- 2021.
- QIP STC (Fundamentals of Corrosion Science and Technology) at IIT Indore- 2020.
- Workshop on Corrosion Science and Engineering- 2020.
- Model United Nations workshop as Cultural Coordinator- 2018 and 2019.
- Fluxus as Cultural Coordinator- 2020.
- Various institute level cultural activities- Spic Macay, Independence, Republic, Teachers Day etc

Other responsibilities:

- Convenor, Department Safety Committee 2024.
- Member, PG evaluation committee 2024.
- Member, Staff selection committee, Department of MEMS, IIT Indore.
- Member, Evaluation committee for Rural innovators- September 2023.
- Member, Security and Safety committee, IIT Indore- 2023-
- Member, Establishment Committee, Department of Chemical Engineering, IIT Indore
- Institute Cultural Coordinator 2018-2019.

- Institute Coordinator, Ek Bharat Shrestha Bharat, IIT Indore – 2019.
- Institute Coordinator, Unnat Bharat Abhiyan, IIT Indore- 2019-2024.
- Institute Member, Rastriya Aviskaar Abhiyan, IIT Indore- 2019-
- Convenor, DPGC MEMS 2020- January 2022.
- M.Tech Program Coordinator- 2019-2024.
- Faculty shortlisting Committee- 2019.

Laboratory Developed:

- Corrosion Science and Engineering (UG Lab)
- Soft Materials Research Laboratory (PG and PhD)

Funding (Project/ Consultancy):

- DST-INSPIRE Faculty Award, DST, New Delhi, Amount: ~85 Lakhs (**Completed**)
- Travel Grant, French Embassy India, 2015 (**Completed**)
- Technical Education Quality Improvement Programme (TEQIP), Amount: 6 Lakhs (**Completed**)
- Quality Improvement Programme (QIP), Amount: ~2 Lakhs (**Completed**)
- National Post-Doctoral Fellowship, DST, New Delhi, Amount ~19 Lakhs (**Completed**)
- TARE, SERB, New Delhi, Amount ~17 Lakhs (**Ongoing)**
- CRDT, IIT Indore, Amount ~ 2 Lakhs (**Ongoing)**
- Bureau of Indian Standards, Ministry of Consumer Affairs, Government of India, Amount 6.5 Lakhs (**Ongoing)**
- Travel Grant, French Embassy India, 2024 (**Completed**)
- Consultant Polymer, JAS Polychem, Pvt. Ltd, Ghaziabad (**3 projects completed**)

International Research Collaborations:

Prof. PH Dixneuf, Prof Jeanne Crassous, University of Rennes, France
Dr. Christophe Bucher and Sebastien Manneville, ENS Lyon, France
Dr. Abul Kalam, King Khalid University, Abha, Saudi Arabia

Membership:

- **S**ociety for **M**aterials **C**hemistry, **B**habha **A**tomic **R**esearch **C**entre, **M**umbai 400 085.
- **S**oft **M**aterials **R**esearch **S**ociety, **J**aipur, **I**ndia.
- **I**nternational **A**cademy of **P**hysical **S**ciences, **A**llahabad.

Book/ Book Chapters:

Book: MXenes - Next-Generation 2D Materials: Fundamentals and Applications
Chapter: Synthesis of MXenes
Manish Kumar Dixit and Mrigendra Dubey
ISBN No. 9781119873990; Publisher: Willey

Research Publications:	
1.	D-(+)-glucose triggered selective hydrometallogelation in a C3-symmetric gelator M. Mukherjee, Y. Kumar, A. Kalam, and **Mrigendra Dubey** **Journal of Materials Chemistry C**, 2024, DOI: 10.1039/D4TC00655K; IF: **5.7**
2.	Dual responsive fluorescence switching of organohydrogel towards base/acid M. K. Dixit, M. Mukherjee, B. K. Sahu, A. Kalam and **Mrigendra Dubey** **Molecular Systems Design & Engineering**, 2024, (Minor Revision); IF: **3.2**

3.	Electrochemical performance of a Li^+-enriched metallohydrogel as electrolyte and electrode materials for supercapacitors Y. Kumar, M. Mukherjee, M. K. Dixit, A. Kalam, and **Mrigendra Dubey** **Sustainable Energy & Fuels**, **2024**, 8, 3015 – 3019; IF: **5.0**
4.	Soft Ionic Diode Fabricated Using Asymmetric Ion Distribution in Li^+-Zn(II)/Cu(II) Metallohydrogels Yeeshu Kumar and **Mrigendra Dubey*** **ACS Appl. Mater. Interfaces**, **2023**, 15, 9, 11970–11976; IF: **10.383**
5.	Li^+-integrated metallohydrogel based mixed conductive electrochemical semiconductor Y. Kumar and **Mrigendra Dubey*** **Chemical Communications**, **2022**, 58, 549-552; IF: **6.22**.
6.	Conductive Zn(II)-metallohydrogels: Role of alkali metal cations size over gelation, rheology and conductance Moupia Mukherjee, Y. Kumar, M. Dixit, M. Mukherjee, A. Kalam and **Mrigendra Dubey*** **Molecular Systems Design and Engineering**, 2021, 6, 8, 654-661; IF: **4.94**
7.	Cd^{2+}-induced Fluorescent Metallogel: A case of CHEF and ACQ phenomenon Manish K. Dixit, C. Mahendar and **Mrigendra Dubey*** **Chemistry–An Asian Journal**, **2022**, https://doi.org/10.1002/asia.201900559; IF: **4.57**.
8.	Bis(Acylhydrazone)-Based Bolaamphiphiles: Effect of Spacer Length on Metalloorganogel Formation, Fluorescence and Conductance Properties Manish K. Dixit, Yeeshu Kumar, Jay Shukla, C. Mahendar and **Mrigendra Dubey*** **ChemPlusChem, 2022**, https://doi.org/10.1002/cplu.201900589; IF: **2.86**.
9.	Corrosion Protection ability of Hydrophobic Zinc based Coordination Polymers on Mild Steel Surface Y. Kumar, S. Pandey, S. Yashpal, C. Mahendar, V.K. Pandey, A. Kalam and **Mrigendra Dubey*** **Journal of coatings technology and research**, DOI: 10.1007/s11998-022-00734-7
10.	Time Dependent Analysis of Galvanic Corrosion on Mild Steel with Magnesium Alloy (AE44) Rivet-Plate Joint System Using COMSOL Multiphysics Simulation Divyanshu Gupta, Yeeshu Kumar, Vishal Prajapati, A Kalam and **Mrigendra Dubey*** **Journal of Bio- and Tribo-Corrosion**, 2022, 8, 111, DOI: https://doi.org/10.1007/s40735-022-00710-z
11.	Analysis of pitting corrosion of pipelines in a marine corrosive environment using COMSOL Multiphysics V. Prajapati, Y. Kumar, D. Gupta, A. Kalam and **Mrigendra Dubey*** **Journal of Bio- and Tribo-Corrosion, 2022**, , 8, 21, 1-11; IF: **3.11**
12.	Long-term Elasto-Visco-Plastic behavior of fly ash blended Indian Montmorillonitic clay in odometer condition M. J. Singh, F. Weiqiang, X. D. Sheng, **Mrigendra Dubey** and L. Borana **International Journal of Geomechanics**, 2022; IF: **3.819**
13.	Conductive Zn(II)-metallohydrogels: Role of alkali metal cations size over gelation, rheology and

	conductance C. Mahendar, Y. Kumar, M. Dixit, M. Mukherjee, A. Kalam and **Mrigendra Dubey*** **Molecular Systems Design and Engineering**, 2021, 6, 8, 654-661; IF: **4.94**
14.	Li^{+}-Zn^{2+} tailored nanostructured metallohydrogel based mixed ionic-electronic conductor Y. Kumar, C. Mahendar, A. Kalam and **Mrigendra Dubey*** **Sustainable Energy & Fuels**, **2021**, 5, 1708-1713; IF: **6.37.**
15.	D-(+)-Glucose-Triggered Metallogel to Metallogel Transition C. Mahendar, M. K. Dixit, Y. Kumar and **Mrigendra Dubey*** **Journal of Materials Chemistry C, 2020,** 8, 11008-11012**;** IF: **7.39**.
16.	Investigation of mechanism behind conductive fluorescent and multi-stimuli responsive Li^{+}-enriched metallogel formation J. Shukla, Y. Kumar, M. K. Dixit, C. Mahendar, V. K. Sharma, A. Kalam and **Mrigendra Dubey*** **Chemistry–An Asian Journal**, **2020**, 15, 3020 – 3028; IF: **4.57**
17.	Nanofabrication of Au nanoparticles over conductive metallohydrogel nanofibers for nanocatalysis application M. K. Dixit, D. Chery, M. Chinthakuntla, C. Bucher and **Mrigendra Dubey*** **Inorg. Chem. Front., 2020**, 7, 991-1002; IF: **6.57**.
18.	An Li^{+}-enriched Co^{2+}-induced metallogel: a study on thixotropic rheological behaviour and conductance Dubey* C. Mahendar, Yeeshu Kumar, Manish K. Dixit and **Mrigendra Dubey*** **Soft Matter, 2020**, 16, 3436-3442; IF: **3.68.**
19**.**	Development of ultrahigh strength novel Co-Cr-Fe-Ni-Zr quasi-peritectic high entropy alloy by an integrated approach using experiment and simulation R. Jain, A. Jain, M.R. Rahul, A. Kumar, **Mrigendra Dubey**, R. K. Sabat, S. Samal, G. Phanikumar **Materialia**, **2020**, 14, 100896.
20.	Li^{+}-induced Fluorescent Metallogel: a case of ESIPT-CHEF and ICT phenomenon Manish Kumar Dixit and **Mrigendra Dubey*** **Phys. Chem. Chem. Phys., 2018,** 20, 23762-23772; IF: **3.68.**
21.	Multi-stimuli responsive conductive sonometallogel: a mechanistic insight into role of ultrasound in gelation V. K. Pandey, M. K. Dixit, S. Manneville, C. Butcher and **Mrigendra Dubey*** **Journal of Materials Chemistry A, 2017**, 5, 6211-6218; IF: **12.73.**
22.	Pyrene-Fluorescein based colour-tunable AIE active hybrid fluorophore material for potential live cell imaging application V. K. Singh, R. Prasad, B. Koch, S. H. Hasan and **Mrigendra Dubey*** **New Journal of Chemistry, 2017,** 41, 5114- 5120; IF: **3.59.**
23.	Alkali base triggered homochiral intramolecular charge transfer Metallogels based on symmetrical A-π-D-chiral-D-π-A type ligands

	M. K. Dixit, V. K. Pandey and **Mrigendra Dubey*** **Soft Matter, 2016,** 12, 3622-3630; IF: **3.68.**
24.	Can enantiomer ligands produce structurally distinct homochiral MOF? **Mrigendra Dubey,** A. Kumar, V. M Dhavale, S. Kurungot, D. S. Pandey **Cryst. Eng. Commun.**, **2015,** 17, 8202-8206; IF: **3.55.**
25.	Anion triggered metallogels: demetallation and crystal growth inside the gel matrix and improvement in viscoelastic properties using Au-NPs A. Biswas, **Mrigendra Dubey**, S. Mukhopadhyay, A. Kumar and D. S. Pandey **Soft Matter**, **2016,** 12, 2997-3003; IF: **3.68.**
26.	Detection of Copper (II) and Aluminium (III) by a new bis-benzimidazole Schiff base in aqueous media via distinct routes A. Kumar, A. Kumar, **Mrigendra Dubey**, A. Biswas, D. S. Pandey **RSC Advances**, **2015,** 5, 88612-88624; IF: **3.36.**
27.	Self-assembled copper(II) metallacycles derived from asymmetric Schiff base ligands: efficient hosts for ADP/ATP in phosphate buffer A. Kumar, R. Pandey, A. Kumar, R. K. Gupta, **Mrigendra Dubey**, A. Mohammed, S. M. Mobin and D. S. Pandey, **Dalton Trans.**, **2015,** 44, 17152–17165; IF: **4.39.**
28.	Morphological tuning via structural modulations in AIE luminogens with the minimum number of possible variables and their use in live cell imaging R. S. Singh, R. K. Gupta, R. P. Paitandi, **Mrigendra Dubey**, G. Sharma, B. Koch, D. S. Pandey **Chem. Commun**., **2015,** 51, 9125-9128; IF: **6.22**.
29.	Size-Controlled Synthesis of Ag Nanoparticles Functionalized by Heteroleptic Dipyrrinato Complexes Having meso-Pyridyl Substituents and Their Catalytic Applications R. K. Gupta, **Mrigendra Dubey**, P. Z. Li, Q. Xu and D. S. Pandey **Inorg. Chem.**, **2015,** 54, 2500-2511; IF: **5.17.**
30.	A dual-responsive "turn-on" bifunctional receptor: a chemosensor for Fe^{3+} and chemodosimeter for Hg^{2+} S. Mukhopadhyay, R. K. Gupta, A. Biswas, A. Kumar, **Mrigendra Dubey**, M. S. Hundal and D. S. Pandey, **Dalton Trans., 2015,** 44, 7118-7122; IF: **4.39.**
31.	Potential apoptosis inducing agents based on a new benzimidazole schiff base ligand and its dicopper(II) complex A. Paul, R. K. Gupta, **Mrigendra Dubey**, G. Sharma, B. Koch, G. Hundal, M. S. Hundal and D. S. Pandey, **RSC Advances**, **2014,** 4, 41228-41236; IF: **3.36.**
32.	Novel tetranuclear copper |2+4| cubanes resulting from unprecedented C=O bond formation cum dearomatization A. Kumar, R. Pandey, R. K. Gupta, **Mrigendra Dubey** and D. S. Pandey **Dalton Trans**., **2014,** 43, 13169-13173; IF: **4.39**.

33.	A saponification-triggered gelation of ester-based Zn(II) complex through conformational transformations A. Kumar, **Mrigendra Dubey**, A. Kumar and D. S. Pandey **Chem. Commun., 2014**, 50, 10086-10089; IF: **6.22**.
34.	Li^{+}-induced selective gelation of discrete homochiral structural isomers derived from L-tartaric acid Pandey Chem. Commun., 2014, 50, 8144-8147; Impact Factor: **6.22**. **Mrigendra Dubey**, A. Kumar, R. K. Gupta and D. S. Pandey **Chem. Commun., 2014,** 50, 8144-8147; IF: **6.22**.
35.	Homochiral coordination polymeric gel: Zn^{2+}-induced conformational changes leading to *J*-aggregated helical fibres formation **Mrigendra Dubey**, A. Kumar and D. S. Pandey **Chem. Commun**., **2014**, 50, 1675–1677; IF: **6.22**.
36.	A Schiff Base and Its Copper(II) Complex as a Highly Selective Chemodosimeter for Mercury(II) Involving Preferential Hydrolysis of Aldimine over an Ester Group A. Kumar, **Mrigendra Dubey**, R. Pandey, R. K. Gupta, A. Kumar, A. C. Kalita and D. S. Pandey **Inorg. Chem**., **2014,** 53*,* 4944–4955; IF: **5.17**.
37.	Retention of Cs-Cl bond induces coordination polymer formation over trinuclear chiral assembly of copper(II) complexes of L-leucine derived ligand **Mrigendra Dubey** and M. Ray **Cryst. Eng. Commun.**, **2013**, 15, 9648- 9654; IF: **3.55.**
38.	Sodium and Potassium Ion Directed Self-Assembled Multinuclear Assembly of Divalent Nickel or Copper and L-Leucine Derived Ligand **Mrigendra Dubey**, R. R. Koner and M. Ray **Inorg. Chem.**, **2009**, 48, 9294- 9302; IF: **5.17.**
39.	Effect of metal coordination and intramolecular H-bond on the acidity of phenolic proton in a set of structurally characterized octahedral Ni(II)complexes of L-histidine derivative S. C. Sahoo, **Mrigendra Dubey**, Md. A. Alam and M. Ray **Inorg. Chim. Acta.**, **2010***,* 363*,* 3055- 3060; IF: **2.046.**