

Dr. Mrigendra Dubey




Present address:

Discipline of Metallurgy Engineering and
Materials Science (MEMS),
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Date of birth: 12-12-1985 **Sex:** Male **Nationality:** Indian **Marital status:** Married

Experience/Education:

Assistant Professor (May 2017- Continue)	Materials Science	Indian Institute of Technology Indore, India
DST- INSPIRE Faculty (Jan 2015- April 2017)	Chiral Inorganic Materials Chemistry	Indian Institute of Technology (BHU), Varanasi, India
UGC-DSK Post Doctoral Fellow (Dec 2012- Dec 2014)	Supramolecular Material Chemistry	Banaras Hindu University, Varanasi, India
Post Doctoral Fellow (Aug 2011- Jul 2012)	Supramolecular Material Chemistry	Institute of Chemistry, Academia Sinica, Taipei, Taiwan
Ph.D. (July, 2011)	Inorganic Chemistry	Indian Institute of Technology, Guwahati, India
M.Sc. (with Merit) (2005)	Inorganic Chemistry	University of Allahabad, Allahabad, India.

Honors /Awards:

- Young Scientist Award, International Academy of Physical Sciences, Allahabad, India- 2017.
- Invited Scientific Visitor at ENS-Lyon, University of Rennes, Grenoble and Burgundy, France – 2017.
- Best Poster Award in Frontiers of Organometallic Chemistry (FOMC) - 2016.
- Invited Research Visitor in France (CNRS- Rennes, Paris VI University and ENS-Lyon) - 2016.
- Invited Research Visitor in University of Rennes and ENS Lyon, France- 2015.
- DST- INSPIRE Faculty Award, Department of Science & Technology, New Delhi, India- 2014.
- Paper selected for Vice Chancellor's Award for Excellence in Research at BHU Varanasi - 2014.

- Dr. D. S. Kothari Postdoctoral Fellowship of University Grants Commission - 2012.
- Qualified Graduate Aptitude Test in Engineering (GATE) - 2006.
- Merit Certificate in M.Sc. - 2005.

Research Interests:

- Design and synthesis of multifunctional Chiral Inorganic Gelators (Metallogel) with an objective of morphological, photo-physical and conductance importance.
- Development of Superabsorbent Materials
- Molecular Engineering for tuning Aggregation Induced Emission and Charge transfer properties.
- Structural Supramolecular Materials Chemistry (Coordination, Crystallography, Chiro-optical effect) based on chiral ligand.

Present Designation:

Assistant Professor at Indian Institute of Technology Indore, India

PhD Students:

1. Mr. C. Mahendar, 2. Mr. Manish Kumar Dixit, 3. Mr. Vinay Kumar Pandey and 4. Mr. Siddhartha Suman

Postgraduate Students:

1. Mr. Hariom Sharma, 2. Mr. Harsh Vaid, 3. Mr. Avi Jain

Invited Lectures:

- First Indo-French Workshop at IIT Indore- 2018.
- Lecture Series in France at ENS-Lyon, University of Rennes, Grenoble and Burgundy – 2017.
- CONAIPS XX, Osmania University, Hyderabad, India, July- 2017.
- UPMC-Paris, ENS Lyon, CNRS-UNIVERSITÉ DE RENNES-1 - 2016.
- UNIVERSITÉ DE RENNES 1 and CNRS-ENS Lyon, France - 2015.
- 48th Annual Convention of Chemists, India at *University of Allahabad, Allahabad, India-2011.*

Ongoing Major Project:

Amount: 35 Lacks; Funding Agency: DST, New Delhi

International Research Collaborations:

Dr. Christophe Bucher and Sebastien Manneville, ENS Lyon, France

Membership:

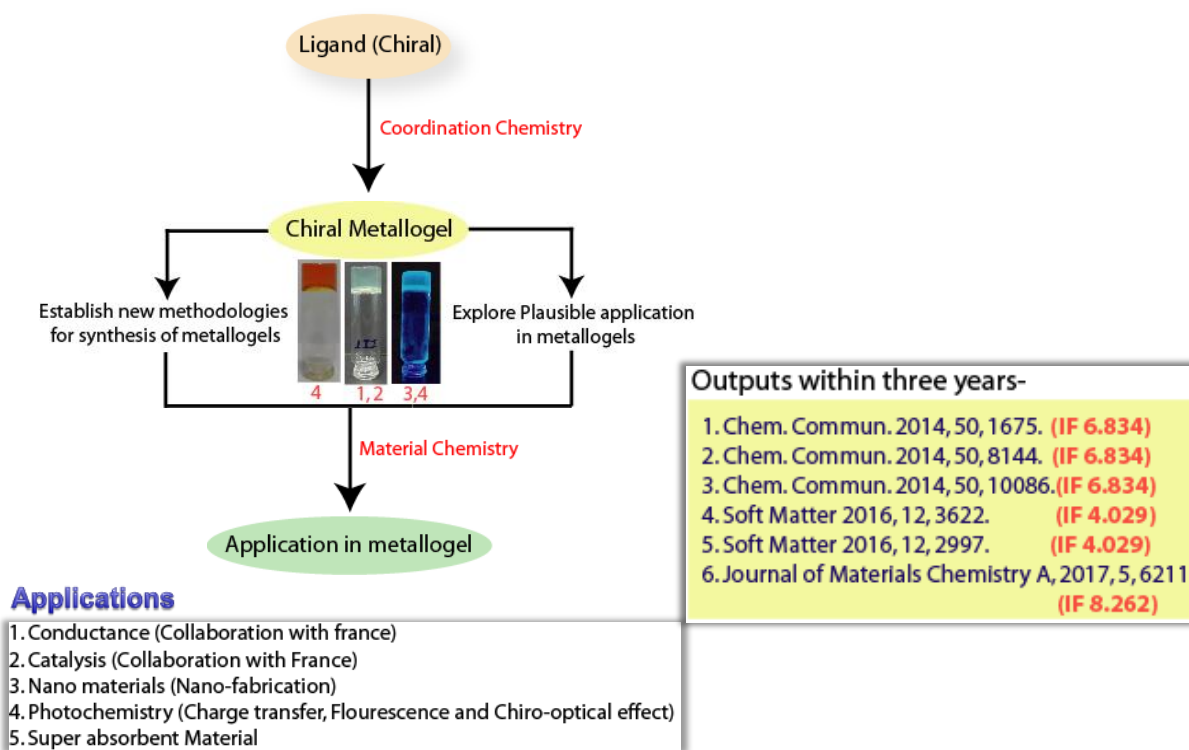
- Society for Materials Chemistry, Bhabha Atomic Research Centre, Mumbai 400 085.
- Soft Materials Research Society, Jaipur, India.
- International Academy of Physical Sciences, Allahabad.

Research Publications:

1.	Li ⁺ -induced Fluorescent Metallogel: a case of ESIPT-CHEF and ICT phenomenon M. K. Dixit and Mrigendra Dubey* Phys. Chem. Chem. Phys. , 2018, (DOI: 10.1039/C8CP04579H), Impact Factor: 3.906 .
2.	A multi-stimuli responsive conductive sonometallogel: a mechanistic insight into the 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; Impact Factor: 9.931 .
3.	Pyrene–fluorescein-based colour-tunable AIE-active hybrid fluorophore material for potential live cell imaging applications V. K. Singh, R. Prasad, B. Koch, S. H. Hasan and Mrigendra Dubey* New Journal of Chemistry , 2017, 41, 5114- 5120; Impact Factor: 3.201 .
4.	Alkali base triggered 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; Impact Factor: 3.709 .
5.	Anion triggered metallogels: demetalation 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; Impact Factor: 3.709 .
6.	Can enantiomer ligands produce structurally distinct homochiral MOFs? Mrigendra Dubey , A. Kumar, V. M Dhavale, S. Kurungot, D. S. Pandey Cryst. Eng. Commun. , 2015, 17, 8202-8206; Impact Factor: 3.304 .
7.	Detection of copper(II) and aluminium(III) by a new bis-benzimidazole Schiff base in aqueous media <i>via</i> distinct routes A. Kumar, A. Kumar, Mrigendra Dubey , A. Biswas, D. S. Pandey RSC Advances , 2015, 5, 88612-88624; Impact Factor: 2.936 .
8.	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; Impact Factor: 4.099 .
9.	Morphological tuning <i>via</i> 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; Impact Factor: 6.290 .
10.	Size-Controlled Synthesis of Ag Nanoparticles Functionalized by Heteroleptic Dipyrinato 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; Impact Factor: 4.700 .
11.	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; Impact Factor: 4.099 .
12.	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; Impact Factor: 2.936 .
13.	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; Impact Factor: 4.099 .
14.	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; Impact Factor: 6.290 .
15.	Li ⁺ -induced selective gelation of discrete homochiral structural isomers derived from L-tartaric acid Mrigendra Dubey , A. Kumar, R. K. Gupta and D. S. Pandey Chem. Commun. , 2014, 50, 8144-8147; Impact Factor: 6.290 .
16.	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; Impact Factor: 6.290 . Selected for Vice Chancellor’s Award for Excellence in Research 2014 at BHU Varanasi.
17.	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; Impact Factor: 4.700 .
18.	Transition Metal-complexes as Chromogenic and Fluorogenic Chemosensors R. Pandey, A. Kumar, Mrigendra Dubey , Q. Xu and D. S. Pandey (Review Submitted)
19.	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 Manabendra Ray Cryst. Eng. Commun. , 2013, 15, 9648- 9654; Impact Factor: 3.304 .

20.	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 Manabendra Ray Inorg. Chim. Acta. , 2010 , 363, 3055- 3060; Impact Factor: 2.264 . <i>Dedicated to Prof. Animesh Chakravorty (Invited)</i>
21.	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 Manabendra Ray Inorg. Chem. , 2009 , 48, 9294- 9302; Impact Factor: 4.700 .
Manuscript Under Preparation	
22.	Homochiral coordination polymeric conductive hydrometallogel for <i>insitu</i> Au-nanofabrication and catalytic activity M. K. Dixit, C. Deborah, V. K. Pandey, C. Butcher and Mrigendra Dubey* (Manuscript under preparation in collaboration with France)
23.	Highly Symmetrical Trinuclear Truxene-Containing Platinum(II) Acetylide Gelator with nano-ball shape morphological importance Mrigendra Dubey and Shih-Sheng Sun
24.	Homochiral self-assembled Ni ₂ Cu containing mixed metal trinuclear assembly: A comparative study of magnetism with three Ni(II) and Cu(II) trinuclear assembly Mrigendra Dubey and Manabendra Ray
25.	Fluorescent Gels of Pyrenemethyl Amino Acids and their Dependence on Amino Acid Side Chain, LiOH, Chirality and Solvent Mrigendra Dubey and Manabendra Ray
26.	Pyrene derived Amino acid, Cu(II) and Zn(II) complexes forming reusable enantiopure channel Mrigendra Dubey and Manabendra Ray
27.	Tuning of white light emission for <i>via</i> aggregation induced emission of smart hybrid materials obtained from AIEgen and carbon quantum dots V. K. Singh, S. H. Hasan and Mrigendra Dubey* (Manuscript under preparation)
28.	Coordination polymeric fluorescent metallogel: Effect of variation in ligand over metallogel properties V. K. Pandey, M. K. Dixit and Mrigendra Dubey* (Manuscript under preparation)
29.	Synthesis of superabsorbent hydrogel acquired from <i>in situ</i> generated water: Useful for prevention of hydrolysis from <i>insitu</i> generated water M. K. Dixit, V. K. Pandey and Mrigendra Dubey* (Under Construction)

Summary of Research Interest:**Strategy for synthesis of coordination based Metallogels**

Gels have attracted substantial interest owing to their fascinating morphology, optical, rheology and various physical properties. In the present era, gels are directly applicable in human daily routine life like medicine, cosmetics, electronic devices, tissue engineering *etc.* The direct applications as well as interesting chemistry of gels further motivated me to establish my research lab for the synthesis of chiral inorganic gelators. Now the question arises why chiral and inorganic with gel? Chirality tunes the morphology and exhibits the *chiro-optical* effects. The incorporation of metal with gelators may be associated with additional physicochemical properties such as *magnetism, color, rheology, adsorption, emission, catalytic activity and redox behavior.* To the date very few chiral inorganic gels are reported because of difficulty in the synthesis of enantiopure chiral gelator molecules as well as the incorporation of metal more often than not inhibits the gelation. Thus, I am actively involved in development of various kinds of materials (particularly gel materials) with special attention to - (i) Superabsorbent, (ii) Conductive, (iii) Charge transfer, (iv) Aggregation induced emission, (v) Chiro-optical, (vi) photophysical, (vii) morphological, (viii) Rheological and (ix) crystal engineering importance.