Dr. Kaushik Ghosh
Associate Professor
Department of Chemistry
Indian Institute of Technology Roorkee
Roorkee 247 667, Uttaranchal, India
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Fax: (91) 01332- 273560

ACADEMIC PROFILE:

- **Ph.D.** Indian Association for the Cultivation of Science (IACS), Calcutta, India 2001
  Supervisor: **Prof. Animesh Chakravorty**
- **M.Sc.** Indian Institute of Technology (IIT), Kanpur, India 1996
- **B.Sc.** University of Kalyani, West Bengal, India 1993 (Gold Medal)

POST-DOCTORAL EXPERIENCE:

- Post-Doctoral Researcher (2000-2002) at Magnetic Resonance Centre, University of Florence, Italy with **Professor Ivano Bertini** in NMR structural biology.
- Post-Doctoral Researcher (2002-2005) at Department of Chemistry and Biochemistry, University of California at Santa Cruz (USA) with **Professor Pradip K. Mascharak** and **Professor Ted Holman.**

RESEARCH INTEREST:

- Coordination chemistry
- Medicinal chemistry
- Biomimetics
- Metal complexes in biological research
- Organometallic chemistry

AWARDS/SCHOLARSHIPS:

- Awarded with National Scholarships in 1984 and 1987.
- Recipient of Certificate of Merit from University of Kalyani: Topper (First Class First, Gold Medallist) in B.Sc. (Honours in Chemistry) in the year 1993.

- Qualified NET [National Eligibility Test (Joint CSIR-UGC) for Research Fellowship and Eligibility for Lectureship under CSIR Fellowship Scheme] in the year 1995.
- Qualified All INDIA - GATE (Graduate Aptitude Test in Engineering), 1996.
- Awarded DST-SERC Fast Track Scheme for Young Scientists (FAST), 2007.

RESEARCH PROJECTS:

Projects Running:

	Title	Sponsored Agency	Duration	Total outlay
1.	Chemistry of non-innocent ligands: Synthesis of phenoxyl radical and related complexes and their applications	DST	3 Year (2013-16)	37.9 Lakh
2.	Synthesis and characterization of novel ruthenium nitrosyl complexes and their biological activity studies	CSIR, New Delhi INDIA	3 Years (2013-16)	29.05 Lakh

Projects Completed

	Title	Sponsored Agency	Duration	Total outlay
1.	Characterization of Short Peptides by NMR Spectroscopy : Study of Metal-Peptide Interaction	IIT Roorkee (Faculty Initiation Grant Scheme A)	1 Year (2006-07)	0.97 Lakh
2.	Studies on manganese peptide interactions.	DST-SERC Fast Track Scheme for Young Scientists, INDIA	3 Years (2007-10)	17.76 Lakh
3.	Synthesis and characterization of novel ruthenium complexes and their DNA binding studies.	CSIR , New Delhi INDIA	3 Years (2008-11)	14.76 Lakh
4.	Synthesis and biological activity studies on metal complexes as nitric oxide (NO) delivery system	IIT Roorkee (MHRD) (Faculty Initiation Grant Scheme A)	3 Years (2010-13)	4.00 Lakh

CURRENT LAB MEMBERS:

	RESEARCH AREA	EDUCATIONAL QUALIFICATION
 Ashish Kumar Dhara Senior Research Fellow	Studies on some transition metal chelates	B.Sc: CCS University, Meerut, 2006 M.Sc: CCS University, Meerut, 2008
 Ovender Singh Senior Research Fellow	Studies on coordination chemistry of iron and manganese and their applications	B.Sc: CCS University, Meerut M.Sc: CCS University, Meerut M.Tech: Birla Institute of Technology, Ranchi
 Anand Ratnam Senior Research Fellow	Some aspects of ruthenium and palladium chemistry	B.Sc: BHU, Varanasi 2010 M.Sc: BHU, Varanasi 2012

Kiran Mawai
Senior Research Fellow

Studies on new transition metal complexes and their reactivities

B.Sc:
MDU, Rohtak
2010

M.Sc:
BHU, Varanasi
2012

Manju Yadav
Senior Research Fellow

Studies on new ruthenium complexes and their reactivities

B.Sc:
MDU, Rohtak
2010

M.Sc:
GJU, Hisar
2012

Kapil Kumar
Junior Research Fellow

Studies on some aspects of coordination chemistry

B.Sc: Garhwal University

M.Sc: Gurukul Kangdi Unniversity, Haridwar, 2011

M.Tech:
Indian Instiute of Technology Roorkee,
2014

Ankur Maji
Junior Research Fellow

Studies on some aspects of transition metal chemistry

B.Sc.:
University of Calcutta,
2012

M.Sc:
University of Calcutta, 2014

Sheela Kumari
Junior Research Fellow

Coordination chemistry and its reactivity studies

B.Sc.:
Delhi University,
Delhi
2013

M.Sc.:
Indian Institute of Technology,
Roorkee
2015

Anshu Singh
Junior Research Fellow

Studies on coordination chemistry

B.Sc.:
Dr. R.M.L. Avadh University,
Faizabad, 2009

M.Sc:
Dr. R.M.L. Avadh University,
Faizabad, 2011

M.Tech:
Indian Instiute of Technology,
Roorkee,
2015

KDP Lakshmee Kumar
Spoonsored Research Fellow

Catalyst development studies for syngas generation & it's conversion to fuels

B.Sc.:
Andhra University,
Visakhapatnam
2006

M.Sc.:
Andhra University,
Visakhapatnam
2008

Priyanka Gupta
M.Tech

Analysis of pincer ligands,derived metal complexes and their reactivity studies

B.Sc.:
Delhi University,
2011

M.Sc.:
Delhi University,
2013

Former Ph.D. students:

NIDHI TYAGI
Studies on iron and manganese complexes of polydentate ligands
Degree awarded: **2011**

PRAMOD KUMAR
Studies on copper and zinc complexes of polydentate ligands
Degree awarded: **2011**

AJANTA CHAKRAVORTY
Study on some cancer marker genes and their relation with herbal and synthetic anticancer molecules
Degree awarded: **2011**

SUSHIL KUMAR
Studies on ruthenium chemistry
Degree awarded: **2013**

VARUN MOHAN
Studies on chemistry of some polydentate ligands and their metal complexes
Degree awarded: **2014**

B.M.N.K. PRASAD
Benzothiazole derivatives for electro-optical applications
Degree awarded: **2015**

RAJAN KUMAR
Some aspects of chemistry of ruthenium with polydentate ligands
Degree awarded: **2015**

SWEETY RATHI
Some aspects of manganese and iron chemistry with polydentate ligands
Thesis Submitted

M.Tech Students (M.Tech in Advance Chemical Analysis)

	Name	Title of dissertation	Degree awarded
1.	**Ramakant Sahoo**	Studies on organometallic chemistry of ruthenium	**2007**
2.	**Aakash Mittal**	Analysis of photorelease of nitric oxide from ruthenium complexes	**2009**
3.	**Hemant Kumar**	Analysis of small molecule interaction with DNA	**2010**
4.	**Isha Goyal**	Analysis of catalytic activity of chromium and copper complexes derived from tridentate ligand	**2011**
5.	**Archita Chaudhury**	Effect of carbohydrates, amino acids and peptones on Sf-9 cell in TubeSpin bioreactors	**2012**
6.	**Ritu Khuswaha**	Synthesis and characterization of fluorescence probes: metal ion detection and protein interaction studies	**2013**
7.	**Kapil Kumar**	Synthesis and characterization of ruthenium complexes and reactivity studies	**2014**
8.	**Anshu Singh**	Analysis of phenoxyl radical in metal complexes	**2015**
9.	**Atul Choudhary**	Chemical analysis of oxidation chemistry	**2016**
10.	**Priyanka Gupta**	Analysis of pincer ligands,derived metal complexes and their reactivity studies	**On going**

M.Sc. Students:

	Name	Title of dissertation	Degree awarded
1.	**Joyes De**	Synthesis and characterization of ruthenium (II) complexes chelated with amino acids	**2007**
2.	**Sushil Kumar**	Synthesis of manganese complexes with polydentate ligands containing peptide bond	**2007**
3.	**Sumit Saha**	Synthesis and characterization of iron and manganese complexes with tetradentate ligand	**2009**
4.	**Ashish Upadhyay**	Synthesis and characterization of iron and manganese complexes with Schiff base ligand	**2009**
5.	**Bratati Roy**	Synthesis of metal sensitive fluorescent probe	**2011**

6.	**Kadam Sashikant Arun Sunanda**	Synthesis of Metal Sensitive Fluorescent Probe and Its Application as a Fluorescent Chemosensor	**2012**
7.	**Basivireddy Challa**	Synthesis and characterization of hydrazone derivatives of pyridine	**2012**
8.	**Sanjoy Sheet**	Synthesis and spectroscopic characterization of cadmium complexes.	**2013**
9.	**Pankaj Gupta**	Studies on transition metal chemistry	**2014**
10.	**Deepshikha Arora**	Ineraction of BSA with fluorescent probes	**2015**
11.	**Sayantani Banerjee**	Controlled oxidation of primary alcohol by copper complexes	**2016**
12.	**Saloni Dagad**		**On going**

RESEARCH PUBLICATIONS:

Publications during doctoral studies:

1. Metallacycle expansion by alkyne insertion. Chemistry of a new family of ruthenium organometallics **Kaushik Ghosh**, Sujay Pattanayak, and Animesh Chakravorty ***Organometallics***, **1998**, *17*, 1956-1960.
2. A new family of acylrhodium organometallics Sujay Pattanayak, Swarup Chattopadhyay, **Kaushik Ghosh**, Sanjib Ganguly, Prasanta Ghosh, and Animesh Chakravorty ***Organometallics***, **1999**, *18*, 1486-1494.
3. Alkyne insertion into the Ru-C bond of a four-membered metallacycle. Insertion rate and reaction pathway **Kaushik Ghosh**, Swarup Chattopadhyay, Sujay Pattanayak and Animesh Chakravorty ***Organometallics***, **2001**, *20*, 1419-1423.
4. Nitrite linkage isomerization promoted by alkyne insertion in ruthenium organometallics Swarup Chattopadhyay, **Kaushik Ghosh**, Sujay Pattanayak and Animesh Chakravorty ***Indian Journal of Chemistry***, **2001**, *40A*, 1-3. (Rapid Communication).
5. A family of organoruthenium nitrites: Alkyne insertion, linkage isomerization and ring nitration Swarup Chattopadhyay, **Kaushik Ghosh**, Sujay Pattanayak and Animesh Chakravorty ***J. Chem. Soc., Dalton Trans.*****, 2001**, 1259-1265.
6. A family of thioxanthato ruthenium and osmium aryls Swarup Chattopadhyay, Bikash Kumar Panda, **Kaushik Ghosh** and Animesh Chakravorty ***Israel J. Chem. (F. A. Cotton Issue)*** **2001**, *41*, 139-144.

7. Synthesis and structure of pyridinine-2-thiolato ruthenium aryls bearing a pendant imine-phenol function. Bikash Kumar Panda, Swarup Chattopadhyay, **Kaushik Ghosh** and Animesh.Chakravorty ***Polyhedron***, **2002**, *21*, 899-904.
8. Isonitrile insertion into Ru-O bond and migratory C-C bond formation. Novel organoruthenium imidic ester and acyl species Bikash Kumar Panda, Swarup Chattopadhyay, **Kaushik Ghosh** and Animesh Chakravorty ***Organometallics***, **2002**, *21*, 2773-2780.
9. Chemistry of a new family of aryl ruthenium species incorporating α-diimine chelation and a pendant imine-phenol function Bikash K. Panda, **Kaushik Ghosh**, Swarup Chattopadhyay, Animesh Chakravorty ***J. Orgmet. Chem.***, **2003**, *674*, 107-115.

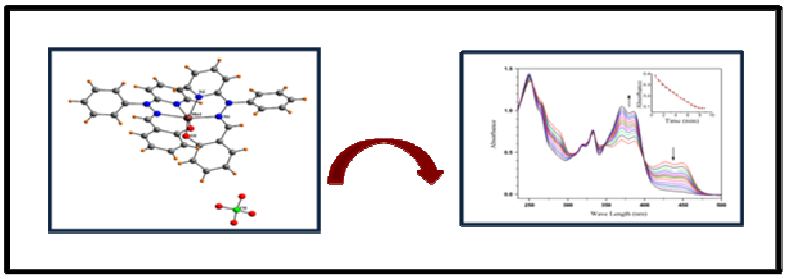
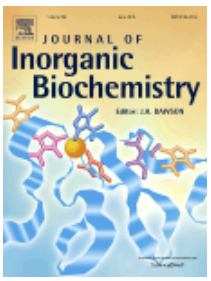
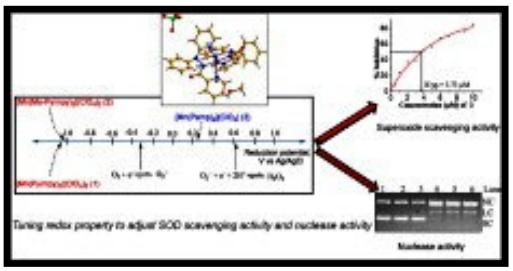
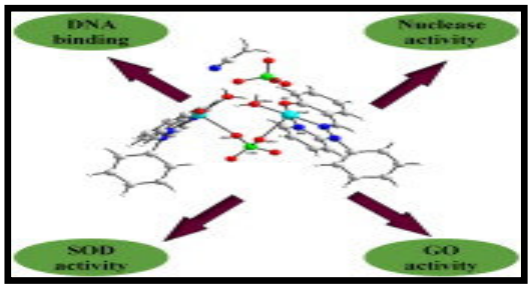
Publications during first post-doctoral studies in Italy:

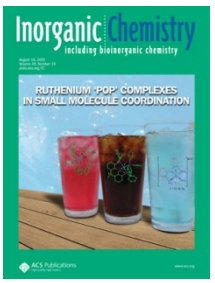
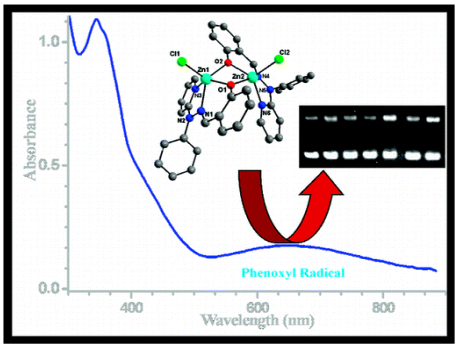
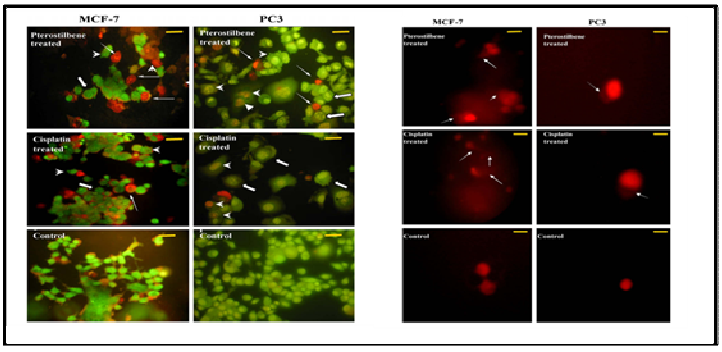
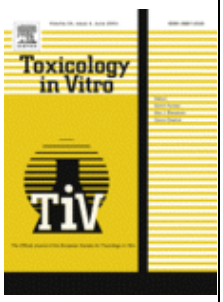
10. The unfolding of oxidized c-type cytochromes: the instructive case of B. pasteurii Ilaria Bartalesi, Ivano Bertini, **Kaushik Ghosh**, Antonio Rosato, Paola Turano ***J. Mol. Biol.***, **2002**, *321*, 693-701.
11. The factors determining the stability of a minimal cytochrome c Antonio Rosato, Ilaria Bartalesi, Ivano Bertini, **Kaushik Ghosh**, Murugendra Vanarotti, Paul R. Vasos and Wei Zhang ***J. Inorg. Biochem.***, **2003**, *96*, 220.
12. A high resolution NMR study of a long lived water molecules in both oxidation states of a minimal cytochrome c Ivano Bertini, **Kaushik Ghosh**, Antonio Rosato, Paul Vasos ***Biochemistry***, **2003**, *42*, 3457-3463.

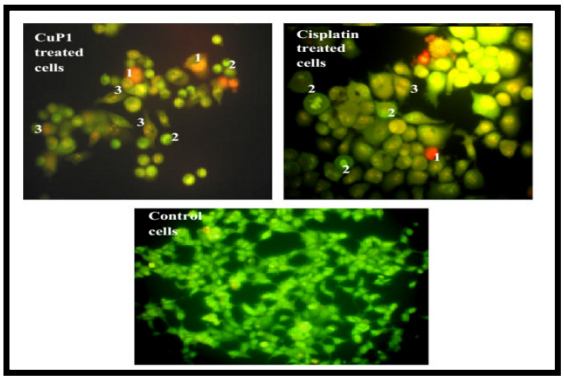
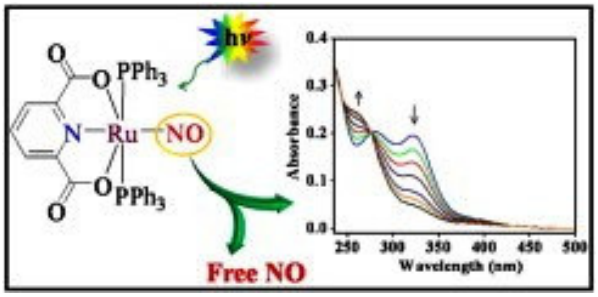
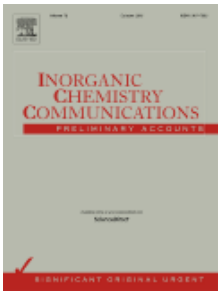
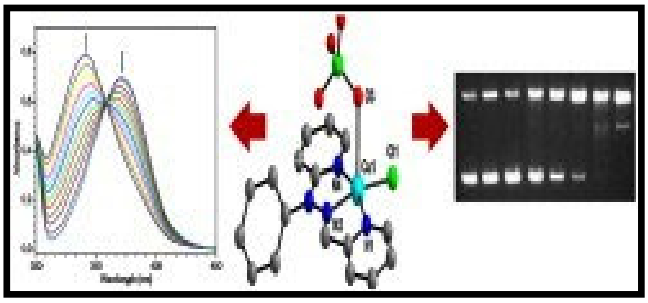
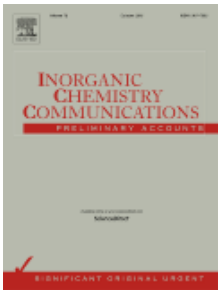
Publications during second post-doctoral studies in USA:

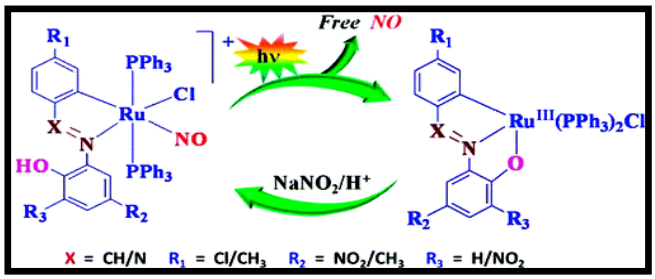
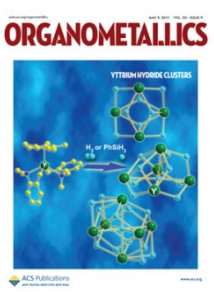
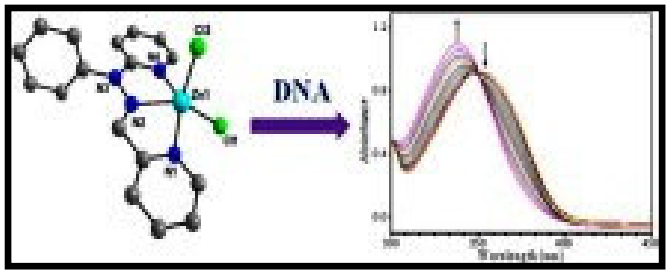
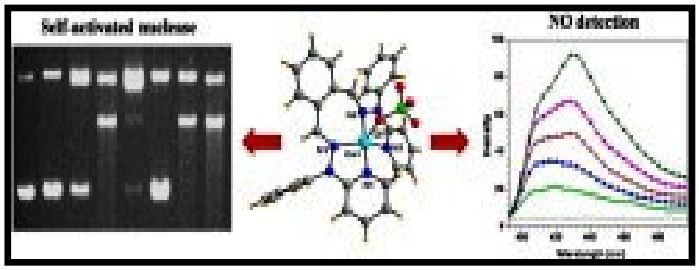
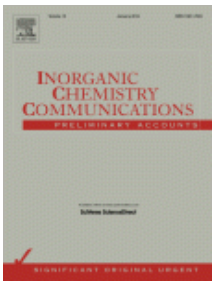
13. Reactions of NO with Mn(II) and Mn(III) center coordinated to carboxamido nitrogen: synthesis of a manganese nitrosyl with photolabile NO **Kaushik Ghosh**, Alegra Eroy-Reveles, Belem Avila, Marilyn Olmstead, Theodore R. Holman, Pradip K. Mascharak ***Inorg. Chem.***, **2004**, *43*, 2988-97.
14. Reductive nitosylation and proton-assisted bridge splitting of a (μ-oxo)-dimanganese(III) complex derived from a polypyridine ligand with one carboxamide group **Kaushik Ghosh**, Alegra Eroy-Reveles, Marilyn Olmstead, Pradip K. Mascharak ***Inorg. Chem.***, **2005**, *44*, 8469-75.
15. Spectroscopic and biochemical characterization of yeast dap1p and mouse PGRMC1 as novel pseudo 5-coordinate heme proteins. **Kaushik Ghosh**, Alisha Thompson, Robert A. Goldbeck, Xiaoli Shi, Stephanie Whitman, Eric Oh, Zhu Zhiwu, Chris Vulpe, and Theodore R. Holman ***Biochemistry***, **2005**, *44*, 16729-36.

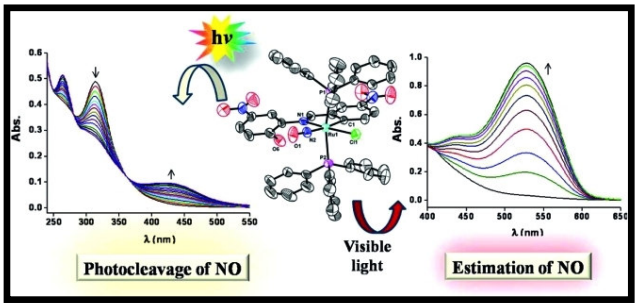
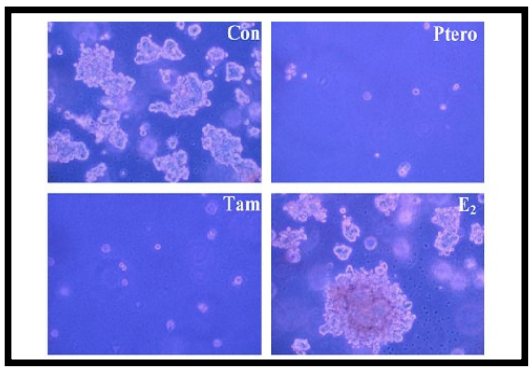
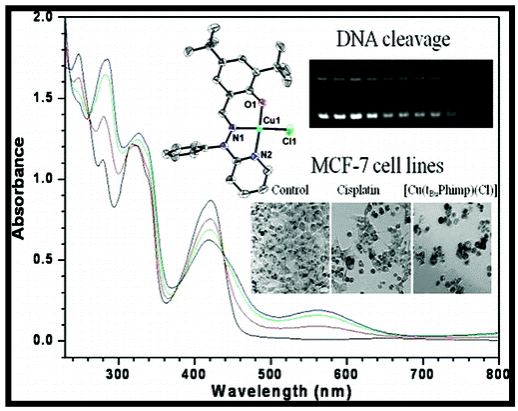
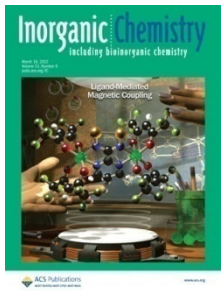
Recent Publications (from IIT Roorkee, India):

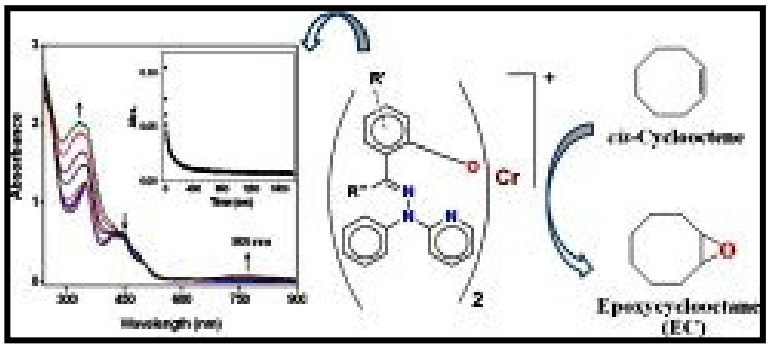
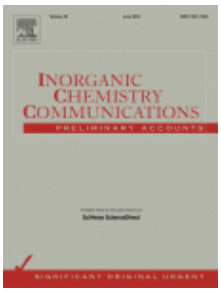
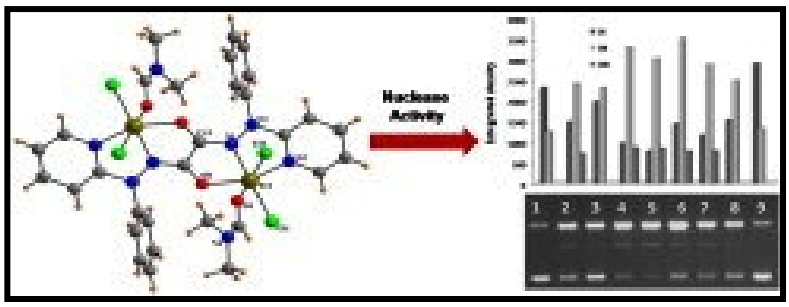
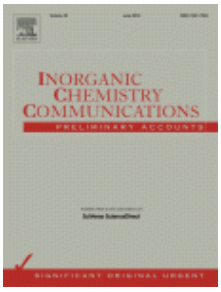
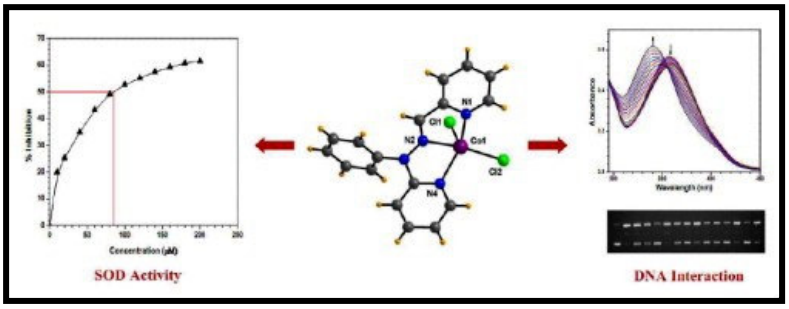
16.	**Stabilization of Mn(II) and Mn(III) in mononuclear complexes derived from tridentate ligands with N_2O donors: Synthesis, crystal structure, superoxide dismutase activity and DNA interaction studies** 	**Kaushik Ghosh**, Nidhi Tyagi, Pramod Kumar, Udai P. Singh, Nidhi Goel, ***J. Inorg. Biochem***. **2010**, *104*, 9-18	
17.	**Role of carboxamido nitrogen in mononuclear manganese complex: Superoxide scavenging activity and nuclease activity** 	**Kaushik Ghosh**, Nidhi Tyagi, Pramod Kumar, ***Inorg. Chem. Commun.*** **2010**, *13*, 380-383.	
18.	**Synthesis and reactivity studies on new copper(II) complexes: DNA binding, generation of phenoxyl radical, SOD and nuclease activity** 	**Kaushik Ghosh**, Pramod Kumar, Nidhi Tyagi, Udai P. Singh, Vaibhave Aggarawal, Maria Camilla Baratto, ***Eur. J. Med. Chem.*** **2010**, *45*, 3770-3779.	

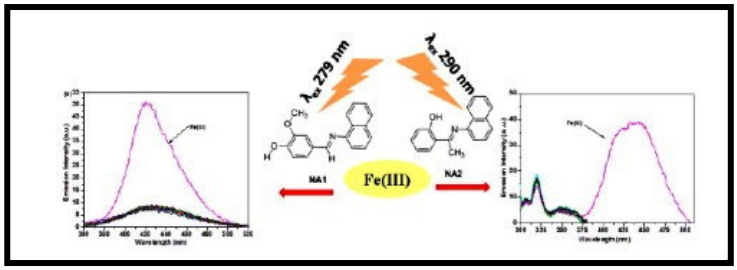
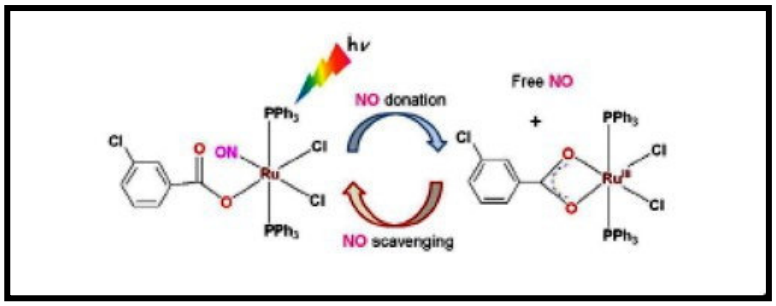
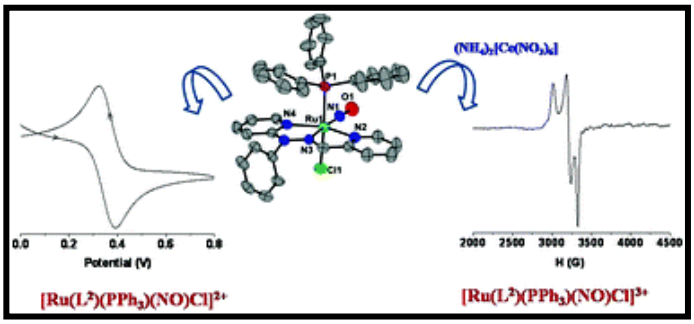
19.	**Oxidative cyclization of a phenolic schiff base and synthesis of a Cyclometalated Ruthenium nitrosyl complex: Photoinduced NO release by visible light** 	**Kaushik Ghosh**, Sushil Kumar, Rajan Kumar, Udai P. Singh, Nidhi Goel, ***Inorg. Chem.*** **2010**, *49*, 7235–7237.	
20.	**Novel diphenoxo-bridged dinuclear zinc complexes: Generation of phenoxyl-radical species and nuclease activity** 	**Kaushik Ghosh**, Pramod Kumar, Nidhi Tyagi, Udai P. Singh , ***Inorg. Chem.*** **2010**, *49*, 7614-16.	
21.	**In vitro evaluation of the cytotoxic, anti-proliferative and anti-oxidant properties of pterostilbene isolated from *Pterocarpus marsupium*** 	Ajanta Chakraborty, Neetu Gupta, **Kaushik Ghosh**, Partha Roy ***Toxicology in Vitro*****, 2010**, *24*, 1215-1228.	

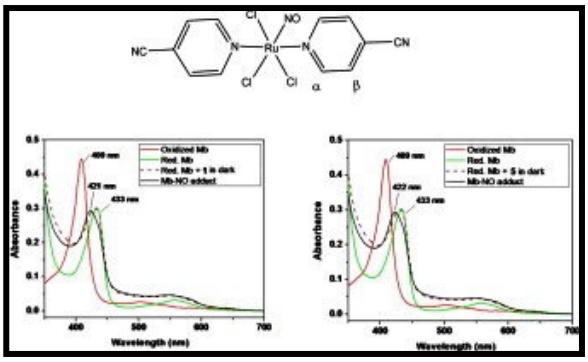
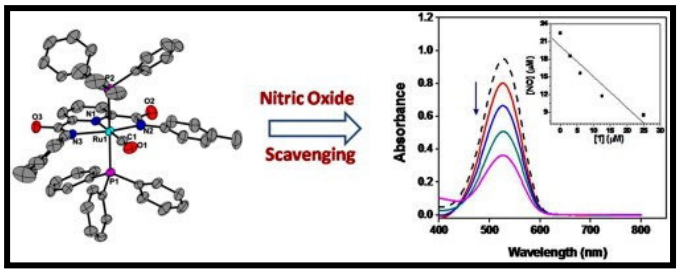
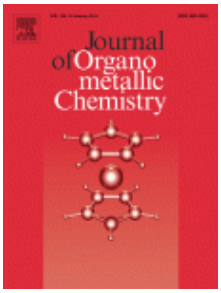
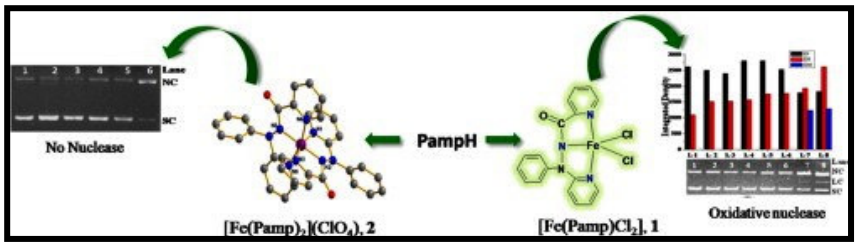
22.	**Evaluation of a Schiff base copper complex compound as potent anticancer molecule with multiple targets of action** 	Ajanta Chakraborty, Pramod Kumar, **Kaushik Ghosh**, Partha Roy, ***Eur. J. Pharmacol.***, **2010**, *647*, 1-12.	
23.	**Synthesis and characterization of a novel ruthenium nitrosyl complex and studies on photolability of coordinated NO** 	**Kaushik Ghosh**, Sushil Kumar, Rajan Kumar, ***Inorg. Chem. Commun.*** **2011**, *14*, 146-149.	
24.	**Synthesis, structural characterization and DNA interaction studies on a novel copper complex: Nuclease activity via self–activation** 	**Kaushik Ghosh**, Pramod Kumar, Nidhi Tyagi, Udai P. Singh, Nidhi Goel, ***Inorg. Chem. Commun.*** **2011**, *14*, 489-92.	

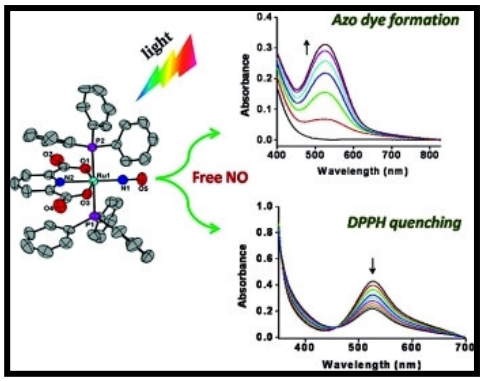
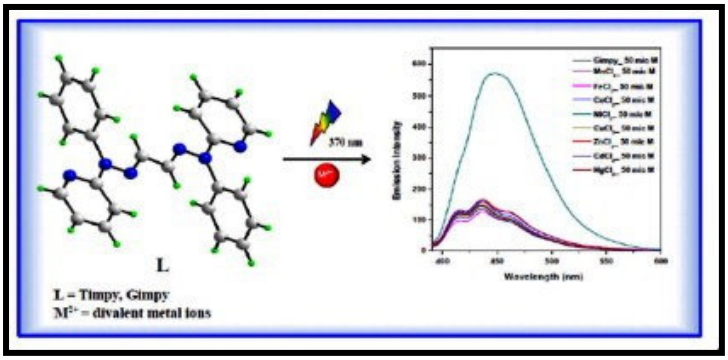
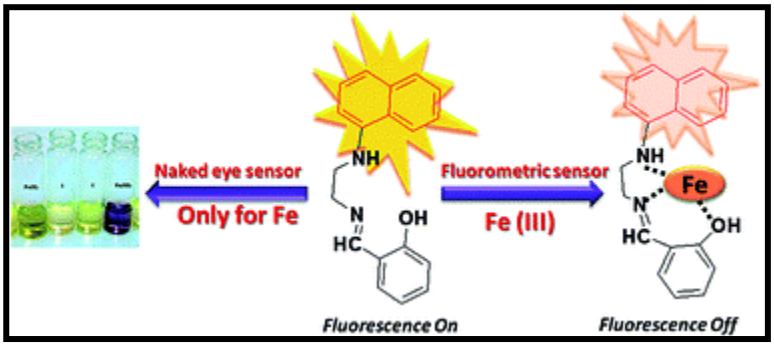
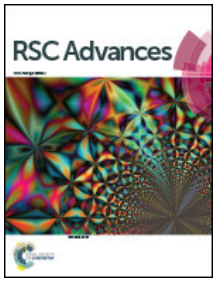
25.	**Photocleavage of coordinated NO under visible light from two different classes of organometallic ruthenium nitrosyl complexes: Reversible binding of phenolato function** 	**Kaushik Ghosh**, Sushil Kumar, Rajan Kumar, Udai P. Singh, Nidhi Goel ***Organometallics*** **2011**, *30*, 2498-2505.	
26.	**Synthesis, crystal structure and DNA interaction studies on mononuclear zinc complexes** 	**Kaushik Ghosh**, Pramod Kumar, Nidhi Tyagi ***Inorg. Chim. Acta.,*** **2011**, *375*, 77-83.	
27.	**Self-activated DNA cleavage and NO reactivity studies on mononuclear copper complexes** 	**Kaushik Ghosh**, Pramod Kumar, Varun Mohan, Udai P. Singh ***Inorg. Chem. Commun.,*** **2012,** *15*, 56-60.	

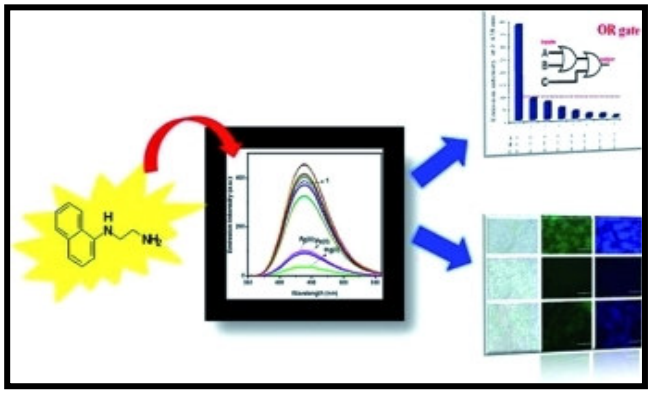
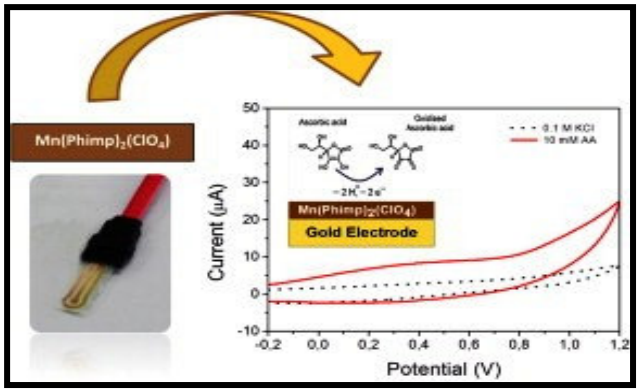
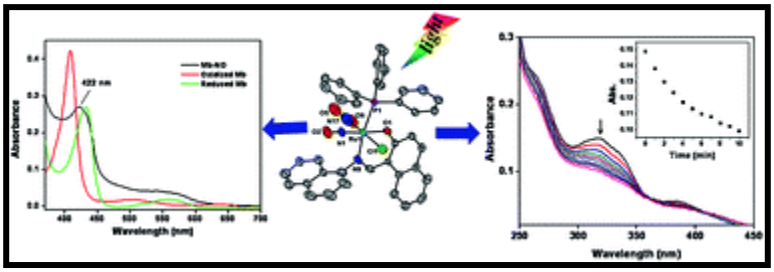
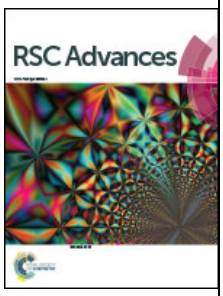
28.	**Ruthenium(III) cyclometalates obtained by site-Specific orthometallation and their reactivity with nitric oxide: Photoinduced release and estimation of NO liberated from the ruthenium nitrosyl complexes** 	**<u>Kaushik Ghosh</u>**, Sushil Kumar, Rajan Kumar, Udai P. Singh ***Eur. J. Inorg. Chem.*** **2012**, 929-938.	
29.	**Long term induction by pterostilbene results in autophagy and cellular differentiation in MCF-7 cells via ROS dependent pathway** 	Ajanta Chakraborty, Naganjaneyulu Bodipati, Marija Krstic Demonacos, Ramakrishna Peddinti **<u>Kaushik Ghosh</u>** Partha Roy ***Molecular and Cellular Endocrinology*** **2012,** *355*, 25-40.	
30.	**Nuclease activity via self-activation and anticancer activity of a mononuclear copper(II) complex: Novel role of the tertiary butyl group in the ligand frame** 	**<u>Kaushik Ghosh</u>**, Pramod Kumar, Varun Mohan, Udai P. Singh, Sahba Kasiri, and Subhrangsu S. Mandal ***Inorg. Chem.***, **2012**, *51*, 3343–3345.	

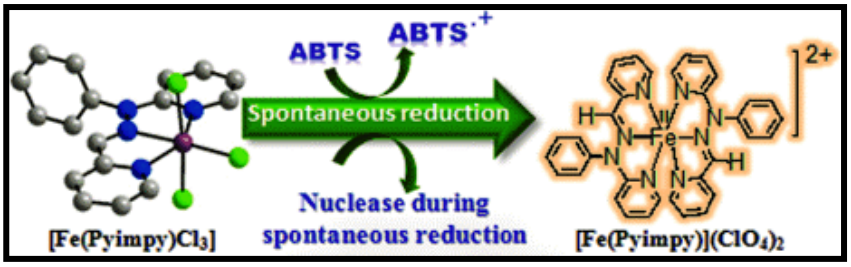
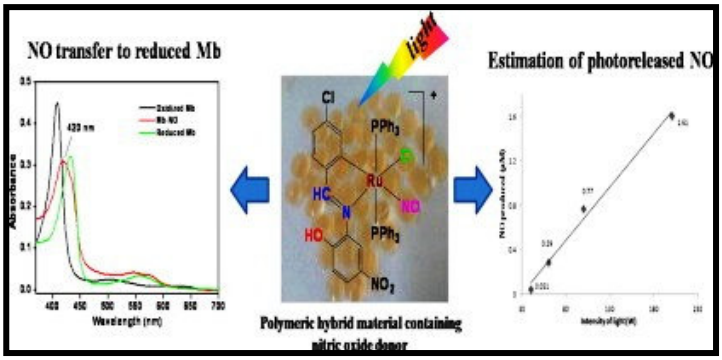
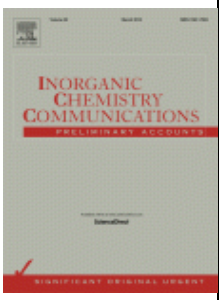
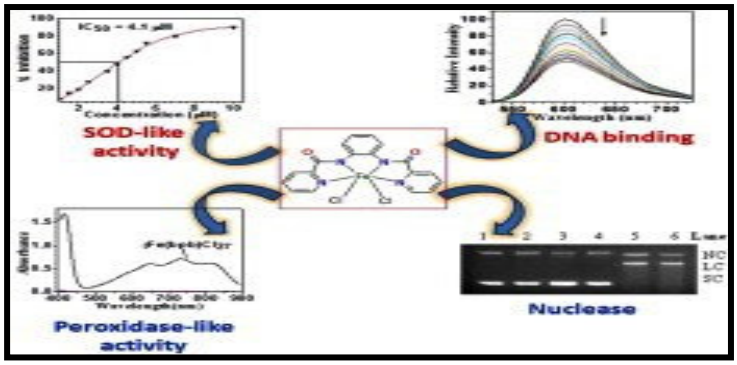
31.	**Synthesis and characterization of chromium (III) complexes derived from tridentate ligands: Generation of phenoxyl radical and catalytic oxidation of olifines** 	**Kaushik Ghosh**, Pramod Kumar, Isha Goel, ***Inorg. Chem. Commun.*** **2012**, *24*, 81-86.	
32.	**Efficient nuclease activity of dinuclear iron(III) complex with ligand having carboxamido nitrogen donors** 	**Kaushik Ghosh**, Nidhi Tyagi, Pramod Kumar, Sweety Rathi, Udai P. Singh ***Inorg. Chem. Commun.*** **2012**, *20*, 167-171.	
33.	**DNA binding, nuclease and superoxide scavenging activity studies on mononuclear cobalt complexes derived from tridentate ligands** 	**Kaushik Ghosh**, Varun Mohan, Pramod Kumar, Udai P. Singh, ***Polyhedron*** 2013, *49*, 167-176.	

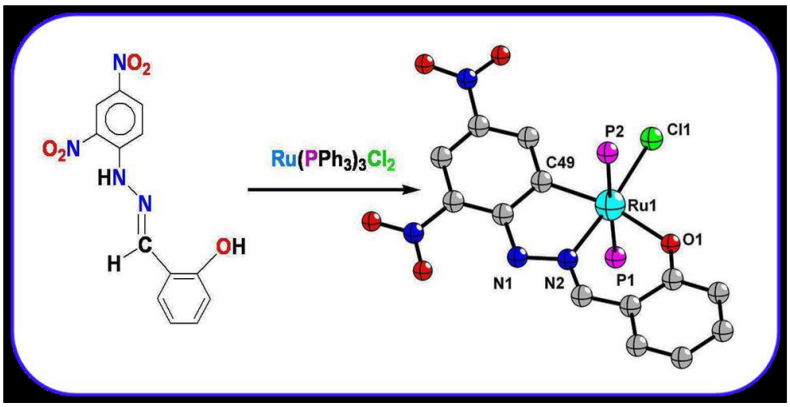
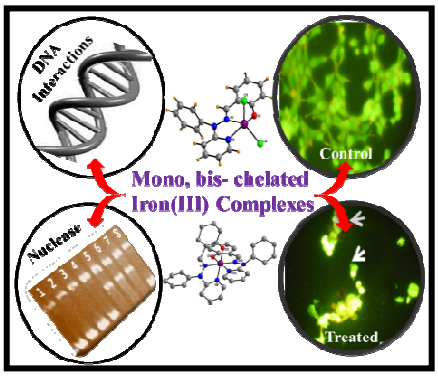
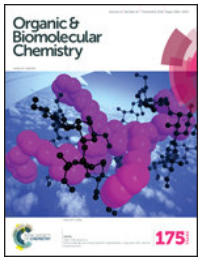
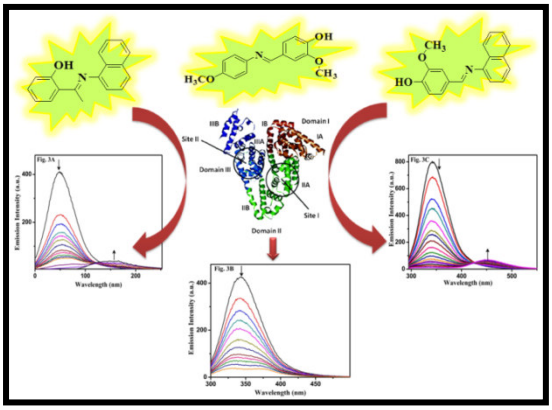
34.	**Sensing of Fe(III) ion via turn-on fluorescence by fluorescence probes derived from 1-naphthylamine** 	**Kaushik Ghosh**, Sweety Rathi, Ritu Kushwaha, ***Tett. Lett.*** **2013**, *54*, 6460-6463.	
35.	**Donation and scavenging of nitric oxide (NO) by flipping of the denticity of carboxylate ligand in novel ruthenium complexes: Photolability of the coordinated NO** 	**Kaushik Ghosh**, Sushil Kumar, Rajan Kumar, ***Inorg. Chim. Acta***, **2013**, *405*, 24-30.	
36.	**Syntheses, structures and properties of ruthenium complexes of tridentate ligands: isolation and characterization of a rare example of ruthenium nitrosyl complex containing {RuNO}^{5} moiety** 	**Kaushik Ghosh**, Rajan Kumar, Sushil Kumar, Udai P. Singh, ***Dalton Trans.***, **2013**,*42*, 13444-13452.	

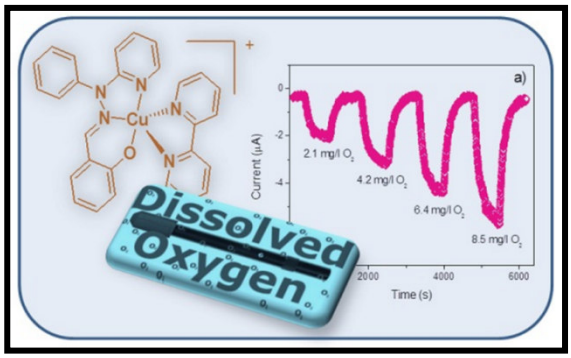
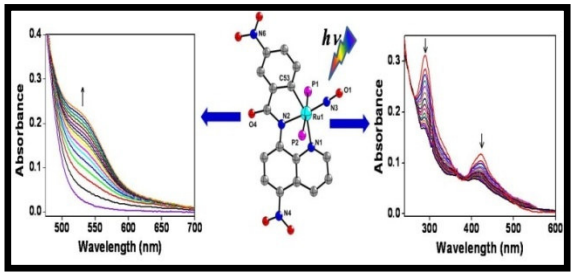
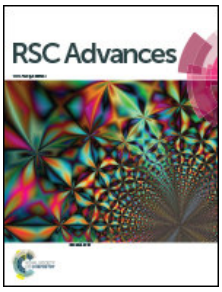
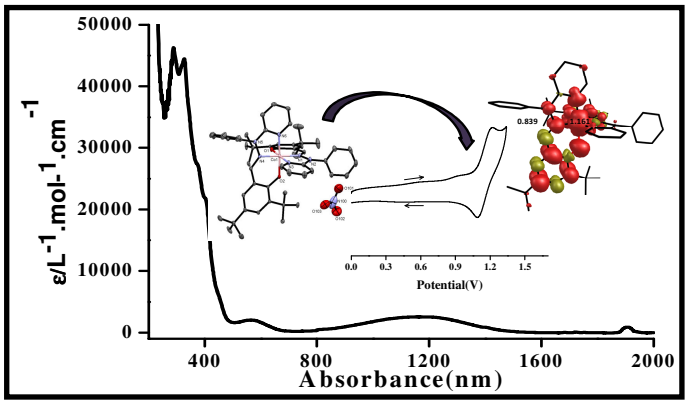
37.	**Synthesis, characterization and photochemical properties of some ruthenium nitrosyl complexes** 	Amit Kumar, Rampal Pandey, Rakesh Kumar Gupta, **Kaushik Ghosh**, Daya Shankar Pandey, ***Polyhedron***, **2013**, *52*, 837-843	
38.	**Ruthenium(II) complexes derived from the ligands having carboxamide groups: Reactivity and scavenging of nitric oxide (NO)** 	**Kaushik Ghosh**, Sushil Kumar, Rajan Kumar, Udai P. Singh ***J. Organomet. Chem.*** **2014**, *750*, 169-175.	
39.	**Synthesis, structure, redox properties and DNA interaction studies on mononuclear iron(III) complexes with amidate ligand** 	**Kaushik Ghosh**, Nidhi Tyagi, Pramod Kumar, Udai P. Singh, ***Inorg. Chim. Acta*** **2014**, *412*, 20-26.	

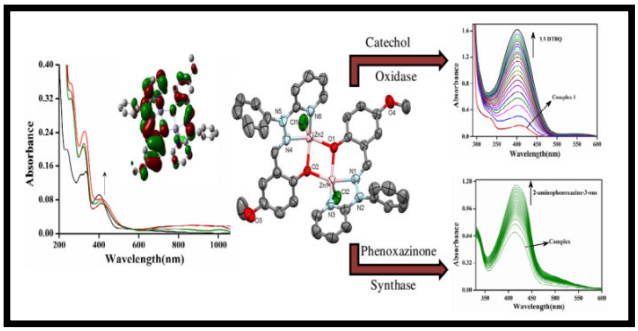
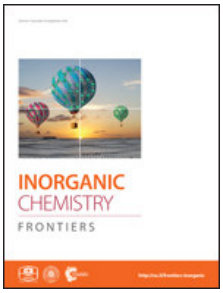
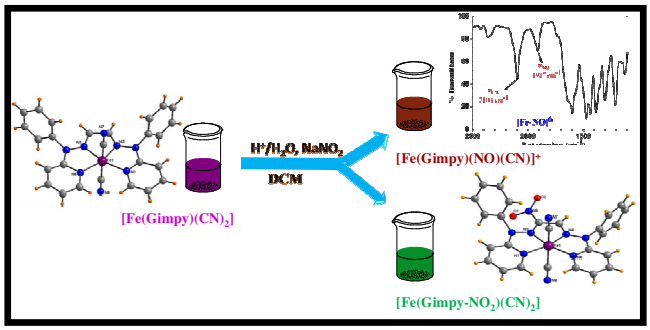
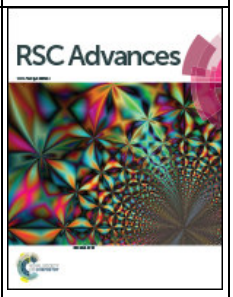
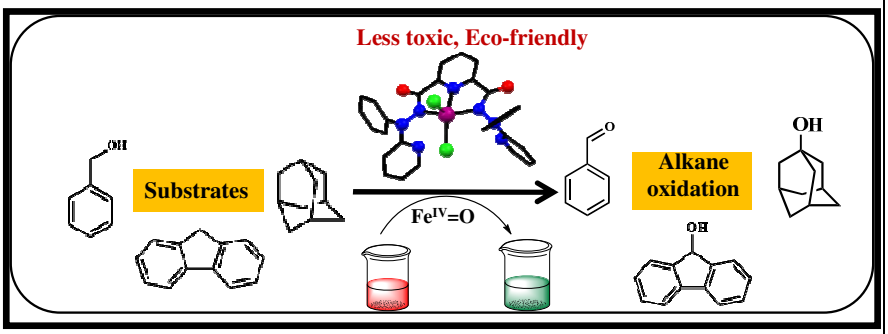
40.	**Ruthenium nitrosyl complexes derived from ligands containing two carboxylate functional groups and studies on photolability of coordinated NO** 	**Kaushik Ghosh**, Sushil Kumar, Rajan Kumar ***Eur. J. Inorg. Chem.*** **2014**, *9*,1454-1461.	
41.	**Selective fluorescence sensing of Ni^{2+} by tetradentate ligands: Synthesis of nickel complexes and crystal structures** 	**Kaushik Ghosh**, Varun Mohan, Pramod Kumar, S.W. Ng, E.R.T. Tiekink ***Inorg. Chim. Acta***, **2014**, *416*,76–84.	
42.	**A novel probe for selective colorimetric sensing of Fe(II) and Fe(III) and specific fluorometric sensing of Fe(III): DFT calculation and logic gate application** 	**Kaushik Ghosh** and Sweety Rathi ***RSC Adv.***, **2014**, *4*, 48516-48521.	

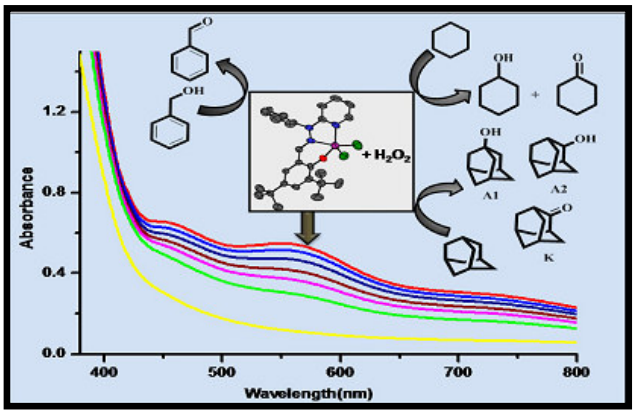
43.	**A Simple Fluorescent Probe Derived from Naphthylamine for Selective Detection of Hg^{II}, Fe^{II} and Fe^{III} Ions in Mixed Aqueous Media: Applications in Living Cells and Logic Gate** 	**Kaushik Ghosh,** Sweety Rathi, Pankaj Gupta, Priya Vashisth and Vikas Pruthi ***Eur. J. Inorg. Chem.***, **2015,** *2*, 311-317.	
44.	**Electrochemical sensing of ascorbic acid by a noval manganese (III) complexes** 	S.G. Leonardi, D. Alioisio, N.Donao, Sweety Rathi, **Kaushik Ghosh**, G.Neri ***Mater.Lett.,*** **2014**,*133*,232-235.	
45.	**Reactivity of nitric oxide with ruthenium complexes derived from bidentate ligands: structure of a ruthenium nitrosyl complex, photoinduced generation and estimation of nitric oxide** 	**Kaushik Ghosh,** Rajan Kumar, Kapil Kumar, Anand Ratnam and U. P. Singh ***RSC Adv.,*** **2014**, *4*, 43599-43605	

46.	**Spontaneous Reduction of Mononuclear High-Spin Iron(III) Complexes to Mononuclear Low-Spin Iron(II) Complexes in Aqueous Media and Nuclease Activity via Self-Activation** 	**Kaushik Ghosh,** Nidhi Tyagi, Ashish Kumar Dhara and Udai P Singh ***Chemistry Asian J.*,** **2015**, *10*, 350-361.	
47.	**Novel drug delivery system for photoinduced nitric oxide (NO) delivery** 	Sushil Kumar, Rajan Kumar, Anand Ratnam, NarayanC. Mishra, **Kaushik Ghosh** ***Inorg. Chem. Commun.*, 2015,** *53,* 23-25.	
48.	**DNA interaction, SOD, peroxidase and nuclease activity studies of iron complex having ligand with carboxamido nitrogen donors** 	**Kaushik Ghosh** Nidhi Tyagi, Hemant Kumar, Sweety Rathi ***Spectrochim.Acta Part A.*** **2015,** *146*, 292-296.	

49.	**Orthometallation in bidentate Schiff base ligands via C-H activation and syntheses of Ruthenium(III) organometallic and studies on mechanism** 	**Kaushik Ghosh,** Rajan Kumar, Sushil Kumar, Manju Bala, Udai P. Singh ***Transition Met. Chem.*** **2015**, *40*, 831-837.	
50.	**Mononuclear iron(III) complexes of tridentate ligands with efficient nuclease activity and studies of their cytotoxicity** 	Nidhi Tyagi, Ajanta Chakraborty, Udai P. Singh, Partha Roy, **Kaushik Ghosh,** ***Org. Biomol. Chem.*** **2015**, *13*, 11445-11458.	
51.	**Fluorescence spectral studies on interaction of fluorescent probes with Bovine Serum Albumin (BSA)** 	**Kaushik Ghosh** , Sweety Rathi, Deepshikha Arora ***J. Lumin.*** **2016**, *00*, 0000.	

52.	**Development of a Novel Cu(II) Complex Modified Electrode and a Portable Electrochemical Analyzer for the Determination of Dissolved Oxygen (DO) in Water** 	Salvatore Gianluca Leonardi, Maryam Bonyani, **Kaushik Ghosh**, Ashish K. Dhara, Luca Lombardo, Nicola Donato, Giovanni Neri ***Chemosensors*** **2016**, *4*, 7.	chemosensors
53.	**Site-specific *ortho*metallation *via* C–H bond activation and syntheses of ruthenium(III) organometallics: studies on nitric oxide (NO) reactivity and photorelease of coordinated NO** 	RajanKumar, SushilKumar, Manju Bala, Anand Ratnam, U.P. Singh **Kaushik Ghosh** ***RSC Adv.***, **2016**, 6, 72096-72106	
54.	**Non-Innocent Property of Tridentate Ligand in Novel Cobalt Complex : Crystal Structure and Evidences for Cobalt(II) Phenoxyl Radical Complex Formation** 	AshishKumar Dhara, Kapil Kumar, Sheela Kumari, Prof. Udai P. Singh **Kaushik Ghosh** ***ChemistrySelect*** 2016, *1*, 3933–3937	

55.	**Radical pathway and O2 participation in benzyl alcohol oxidation, catechol and o-aminophenol oxidase activity studies with novel zinc complexes: Functional modeling of galactose oxidase enzyme, experimental and theoretical investigation** 	**Kaushik Ghosh**, Ashish Kumar Dhara and Udai P Singh ***Inorg. Chem. Front.*** **2016**, 3, 1543-1558.	
56.	**Nitric oxide (NO) reactivity studies on mononuclear Iron(II) complexes supported by a tetradentate Schiff base Ligand** 	Nidhi Tyagi, Ovender Singh, Udai P. Singh, **Kaushik Ghosh,** ***R.Sc. Adv.,*** **2016**, *6,* 115326-115333.	
57.	**Non-heme iron(III) complex with tridentate ligand: Synthesis, structures and catalytic oxidations of alkane** 	Nidhi Tyagi, Ovender Singh, **Kaushik Ghosh,** ***Catal. Commun.,*** **2017,** 00, 0000.	

58.	**Oxidation chemistry of C-H bond by mononuclear iron complexes derived from tridentate ligands containing phenolato function** 	Atul Choudhary, Ovender Singh, Udai P. Singh, **Kaushik Ghosh** ***Inorg. Chim. Acta*** **2017**, 00, 0000.	

Conferences/workshops:

1. Participated in National Workshop on "*Techniques and challenges for structure solution in chemical crystallography*" organized by Department of Chemistry, IIT Roorkee. Sept. **2007**.
2. Synthesis, structure and properties of mononuclear manganese complexes, **Kaushik Ghosh**, Nidhi Tyagi, Pramod Kumar, B. Varghese, "*Modern Trends in Inorganic Chemistry-XII*" at IIT Madras during 6-8 Dec, **2007**.
3. Synthesis and characterization of cycloruthenated nitrosyl complexes and their photolability studies, **Kaushik Ghosh**, Sushil Kumar, Varun Mohan, Akash Mittal, Pramod Kumar, Nidhi "*4thAsian Biological Inorganic Chemistry Conference (ASBIC-2008)*" at Jeju, Korea during Nov 10-13, **2008**.
4. SOD activity and DNA interaction studies of mononuclear manganese complexes: Role of carboxamido nitrogen, **Kaushik Ghosh**, Nidhi Tyagi, Pramod Kumar, "*Modern Trends in Inorganic Chemistry-XIII*" at IISc Bangalore during 7- 10 Dec, **2009**.
5. DNA interaction and cytotoxicity assay of new family of mononuclear copper complexes, Pramod Kumar, Nidhi Tyagi, **Kaushik Ghosh**, "*Modern Trends in Inorganic Chemistry-XIII*" at IISc Bangalore during 7- 10 Dec, **2009**.
6. A new family of mononuclear copper(II) complexes: Synthesis, crystal structure, EPR and DNA interaction studies, Pramod Kumar, Nidhi Tyagi, **Kaushik Ghosh**, U. P.Singh, M. C. Baratto, "*School and Symposium on Advanced Biological Inorganic Chemistry (SABIC-2009)*" at TIFR Mumbai during Nov 4-7, **2009**.
7. Reversible binding of phenolato function during photolability of coordinated NO and nitrosylation in σ-aryl ruthenium complexe, **Kaushik Ghosh**, Sushil Kumar, Rajan Kumar,

Nidhi Goel. '*Molecules, Supramolecules and Materials*' as a part of Golden Jubilee celebration of chemistry department IIT Kanpur, during October 01-03, **2010**.

8. Design, strategy and synthesis of novel NO donors: Photoinduced delivery of NO under visible light from ruthenium cyclometalates" **Kaushik Ghosh**, Sushil Kumar, Rajan Kumar *5th Asian Biological Inorganic Chemistry* (AsBIC-Vth)' in Kaohsiung, Taiwan during 1-5 November, **2010**.
9. Cobalt complexes derived from tridentate ligands: Generation of phenoxyl radical and nuclease activity, Varun Mohan, Pramod Kumar, **Kaushik Ghosh**, U. P. Singh, "*Diamond Jubilee Symposium on Recent Trends in Chemistry (DJSRTC)*" at IIT Kharagpur, 21-23 Oct, **2011**.
10. Interaction of DNA with Cu(II), Zn(II) and Co(II) complexes: Generation of new species and role of redox active metal centers in nuclease activity, **Kaushik Ghosh**, Varun Mohan, Pramod Kumar, U. P. Singh, "*3rd Asian Conference on Coordination Chemistry (ACCC3)*" Organized by Chemistry Department, IIT Kanpur & IIT Delhi, 17-20 Oct, **2011**.
11. Synthesis and characterization of mononuclear cobalt complexes derived from tridentate ligands, Varun Mohan, Pramod Kumar, Nidhi Goel, **Kaushik Ghosh**, "*4th Conference on Recent Trends in Instrumental Methods of Analysis*" at IIT Roorkee, 18-20 Feb, **2011**.
12. Orthometallation and synthesis of ruthenium (III) organometallics : Reaction of nitric oxide and photochemistry of ruthenium nitrosyl complexes, **Kaushik Ghosh**, Sushil Kumar, Rajan Kumar, Manju Bala *"4thAsian Conference on Coordination Chemistry (ACCC4)"*at Jeju, Korea during Nov 4-7, **2013**.
13. Synthesis and characterization of ruthenium nitrosyl complex containing $\{RuNO\}^5$ moiety,'*15th CRSI National Symposium in Chemistry* (NSC-15)' **Kaushik Ghosh**, Sushil Kumar, Rajan Kumar in Banaras Hindu University, Varanasi, during 1-3 February, **2013**.
14. Synthesis and characterization of novel fluorescent probes: selective and specific fluorescence sensor for the detection of mercury(II)/ iron(II) and colorimetric sensor for iron(II), Sweety Rathi, **Kaushik Ghosh**, "*Modern Trends in Inorganic Chemistry-XIII*" at IIT Roorkee during 13- 16 Dec, **2013**.
15. Synthesis and characterization of novel fluorescent probes. Selective and specific fluorescence sensor for detection of Hg(II) /Fe(II) and colorimetric sensor for Fe(II), Sweety Rathi, **Kaushik Ghosh** "*Modern Trends in Inorganic Chemistry-XV*" at IIT Roorkee. Dec. **2013**.
16. Mononuclear copper and dinuclear zinc complexes: Generation of phenoxyl radical complexes, alcohol oxidation and catecholase activity studies,'Indo-French Seminar on Bio-inorganic Approaches to Current Health Problems', Ashish Kumar Dhara, Kiran Mawai,**Kaushik Ghosh**, in Pondicherry University, Pondicherry, during 24-28 March, **2014**.
17. Synthesis and characterization of nitrosyl complexes: Controlled delivery of nitric oxide (NO),'Indo-French Seminar on Bio-inorganic Approaches to Current Health Problems', **Kaushik Ghosh**, Rajan Kumar, Sushil Kumar, Manju Bala, Anand Ratnam, in Pondicherry University, Pondicherry, during 24-28 March, **2014**.

18. Carbon-hydrogen bond activation and synthesis of ruthenium(III) cyclometalates, '*16th CRSI National Symposium in Chemistry* (NSC-16)', Rajan Kumar, Sushil Kumar, **Kaushik Ghosh** in IIT Bombay, during 7-9 February, **2014**.

19. Fe(II) complexes derived feom meridional tridentate ligands containing N_3 and N_2O donors Studies on catechol dioxygenase activity, Sweety Rathi, **Kaushik Ghosh** *,"Indo- French Symposium* " at NISER Bhubaneshwar. Feb. **2014**.

20. Carbon- Hydrogen bond activation and synthesis of ruthenium(III) cyclometalates, Rajan Kumar, Sushil Kumar, **Kaushik Ghosh,** *"Chemical Research Society of India"* at IIT Bombay. Feb. **2014**.

21. Functional mimicking of galactose oxidase enzyme by copper complexes derived from non- innocent ligands: Designed of new catalysts derived for controlled oxidation of primary alcohol oxidation, Ashish Kumar Dhara , Kapil Kumar, **Kaushik Ghosh,** "*Modern Trends in Inorganic Chemistry-XVI* at Jadavpur University. Dec. **2015**.

22. Syntheses and structure of palladium complexes derived from Schiff base ligands and studies on their catalytic activity for C-C bond formation Anand Ratnam, Manju Bala, Rajan Kumar, U.P. Singh **Kaushik Ghosh,** 18th CRSI national symposium in chemistry, Punjab university Chandigarh. Feb **2016**.

23. Mononuclear copper complexes for structural functional mimicking of galactose oxidase: nuclease and protease activity studies Ovender Singh, U.P. Singh,**KaushikGhosh,** 18th CRSI national symposium in chemistry, Punjab university Chandigarh. Feb **2016**.

24. Mononuclear copper complexes for structural functional mimicking of galactose oxidase: nuclease and protease activity studies Anand Ratnam, Manju Bala, Rajan Kumar, U.P. Singh,**KaushikGhosh,** 18th CRSI national symposium in chemistry, Punjab university Chandigarh. Feb **2016**.

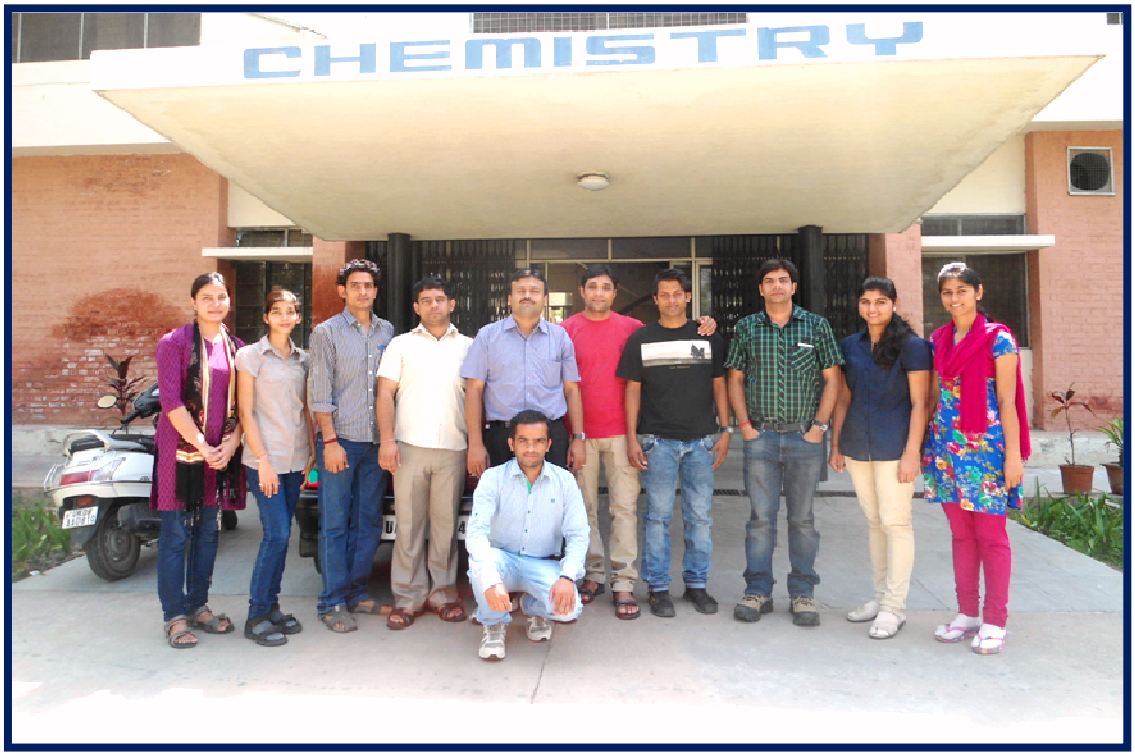
25. Water soluble copper(II) complex having pendant phthalic anhydride moiety: Crystal structure, DNA interaction studies, nuclease activity, catecholase and phenoxazinone synthase activity studies Ovender Singh, Ankur Maji, **Kaushik Ghosh,** 5 th Symposium on advanced biological inorganic chemistry SABIC **2017**.

INVITED TALK

S.No.	Title	Symposium	Place	Date
1.	Synthesis, structure and properties of mononuclear manganese complexes	*Modern Trends in Inorganic Chemistry-XII*	IIT Madras	6-8 Dec., **2007**
2.	Interaction of DNA with Cu(II), Zn(II) and Co(II) complexes: Generation of new species and role of redox active metal centers in nuclease activity	*3rd Asian Conference on Coordination Chemistry (ACCC3)*	IIT Kanpur & IIT Delhi	17-20 Oct, **2011**
3.	Orthometallation and synthesis of ruthenium (III) organometallics : Reaction of nitric oxide and photochemistry of ruthenium nitrosyl complexes	*4thAsian Conference on Coordination Chemistry (ACCC4)*	Jeju, Korea	4-7 Nov, **2013**
4.	Delivered popular lecture entitled " Chemistry : a natural science" in DST, Govt. of India sponsored programme	*Innovation in Science Pursuit for Inspired Research (INSPIRE)*	Shobhit University Meerut	20 June, **2013**
5.	Mononuclear copper and dinuclear zinc complexes: Generation of phenoxyl radical complexes, alcohol oxidation and catecholase activity studies	*Indo-French Seminar on Bio-inorganic Approaches to Current Health Problems*	Pondicherry University	24-28 March, **2014**
6.	Our Trevelogue to Inorganic Chemistry	*Guest Lecture*	LCC Toulouse, France	November, **2014**
7.	Our Trevelogue to Inorganic Chemistry	*Guest Lecture*	University di Occidental Brest, France	January, **2015**

8.	Popular lecture entitled Role of metal ions: From bio system to industry	*Guest Lecture*	IGFRI, Grassland, Jhansi	9th Aug **2015**
9.	Chemistry with complexes capable of generating phenoxyl radical: Application of the lessons learned from galactose oxidase	*Modern Trends in Inorganic Chemistry-X Modern Trends in Inorganic Chemistry-XVI*	Jadavpur University Kolkata	3-5th Dec **2015**
10.	Nature's teaching through galactose oxidase enzyme: Structure and reactivity studies on phenolato andphenoxyl radical complexes	*Recent developments in chemistry*	NIT Durgapur	4-6th October **2016**

Lab Group-2014



Birthday Celebration

Dhanaulti Trip