

Dr. Kaushik Ghosh

Professor

Department of Chemistry
Indian Institute of Technology Roorkee
Roorkee 247 667, Uttaranchal, India

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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 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
5.	Chemistry of non-innocent ligands: Synthesis of phenoxy radical and related complexes and their applications	DST	3 Year (2013-16)	37.9 Lakh
6.	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 Ongoing:**

S.No.	Title	Sponsored Agency	Duration	Total Outlay
1.	Activation of C-H bond and synthesis of organometallic ruthenium and palladium complexes: applications in organic syntheses and a search for new directing group(S).	CSIR	3 Year (2018-21)	12.5 Lakh

CURRENT LAB MEMBERS:



Kapil Kumar
Senior Research Fellow

Studies on some aspects of coordination chemistry

B.Sc: Garhwal University

M.Sc: Gurukul Kangri University, Haridwar, 2011

M.Tech:
Indian Institute of Technology Roorkee, 2014



Ankur Maji
Senior Research Fellow

Studies on some aspects of transition metal chemistry

B.Sc.:
University of Calcutta, 2012

M.Sc:
University of Calcutta, 2014



Sheela Kumari
Senior Research Fellow

Coordination
chemistry and its
reactivity studies

B.Sc.:
Delhi University,
Delhi
2013

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



Anshu Singh
Senior Research Fellow

Coordination
complexes of
polydentate ligands
and their reactivity
studies

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

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

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



KDP Lakshmee Kumar
Sponsored Research Fellow

Catalyst development
studies for syngas
generation & its
conversion to fuels

B.Sc.:
Andhra University,
Visakhapatnam
2006

M.Sc.:
Andhra University,
Visakhapatnam
2008



Sain Singh
Junior Research Fellow

Studies on
controlled delivery of
nitric oxide and
oxidation chemistry
by designed
ruthenium complexes

B.Sc.: HNB Garhwal University
2015

M.Sc.: HNB Garhwal University
2017



Virender Kumar Chaudhary
Junior Research Fellow

Studies on transition
metal chemistry

B.Sc.: University of Allahabad
2013

M.Sc.: University of Allahabad
2017

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

Degree awarded: **2016**



**ASHISH KUMAR
DHARA**

Studies on some transition metal chelates

Degree Awarded: **2017**



OVENDER SINGH

Studies on coordination chemistry of iron and manganese and their applications

Degree awarded: **2018**



ANAND RATNAM

Some aspects of ruthenium and palladium chemistry

Degree awarded: **2018**



KIRAN MAWAI

Studies on new transition metal complexes and their reactivity studies

Degree awarded: **2019**



Manju Bala

Studies on new ruthenium complexes and their reactivities

Degree awarded: **2019**

M.Tech Students (M.Tech in Advanced 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	2017
11.	Prasoon Raj Singh	Analysis of ruthenium complexes as homogeneous catalysis for different catalytic reactions	2018

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	Interaction of BSA with fluorescent probes	2015
11.	Sayantani Banerjee	Controlled oxidation of primary alcohol by copper complexes	2016
12.	Saloni Dagad	Diphenoxo bridged dinuclear cadmium complex and generation of phenoxyl radical	2017

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| 13. | Neha Antil | DNA and protein interaction studies of diimine compound inspired by curcumin selective sensing of mercury ions | 2018 |
| 14. | Nishant Sharma | Synthesis of NpyNamNpy based amido Iron(III) complexes and their applications in alkane oxidation | 2019 |
| 15. | Abhinav Tyagi | Synthesis and study of coordination complexes | 2019 |

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.

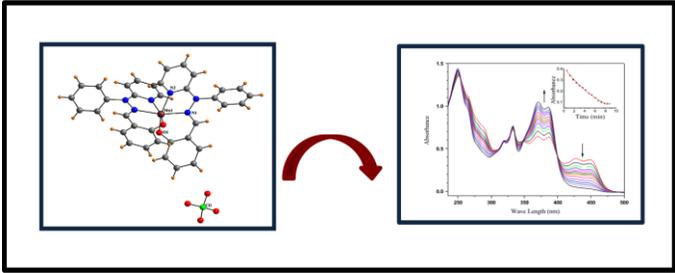
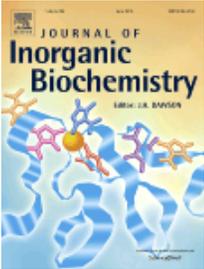
Publications during first post-doctoral studies in Italy:

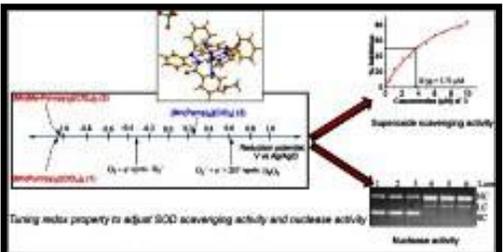
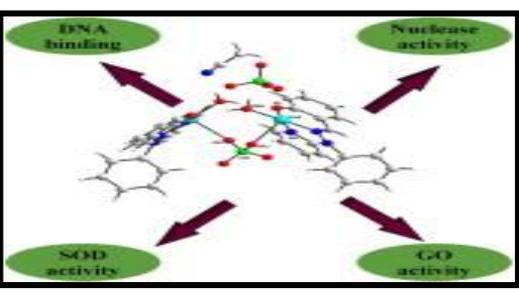
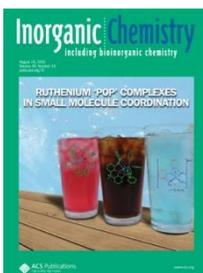
10. The unfolding of oxidized c-type cytochromes: the instructive case of B. pasteurii Ilaria Bartalesi, Ivano Bertini, **Kaushik Ghosh**, Antonio Rosato, Paola Turano *J. Mol. Biol.*, **2002**, 321, 693-701.
11. The factors determining the stability of a minimal cytochrome c Antonio Rosato, Ilaria Bartalesi, 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.

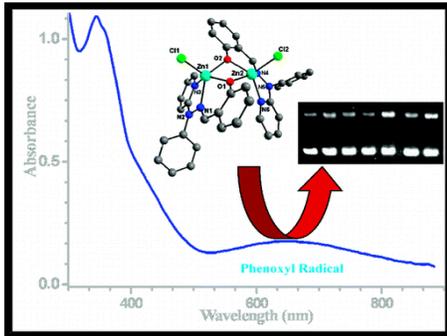
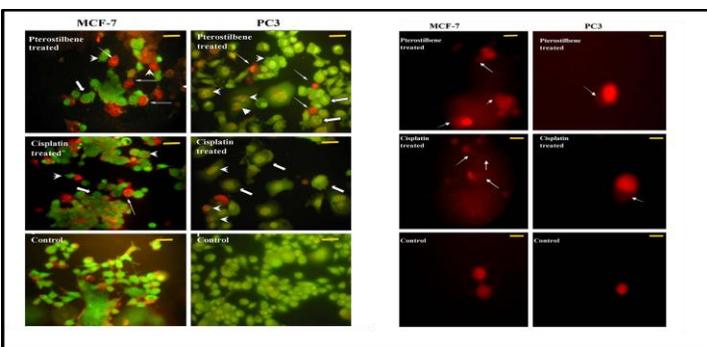
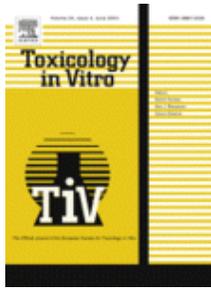
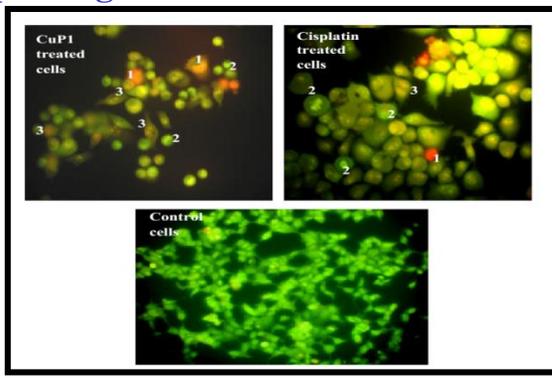
Publications during second post-doctoral studies in USA:

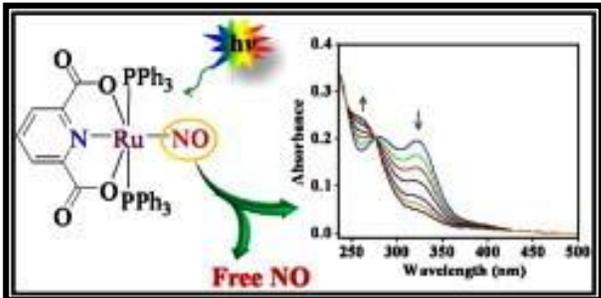
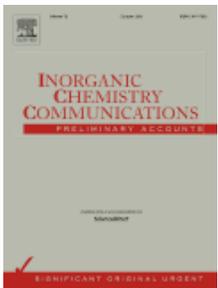
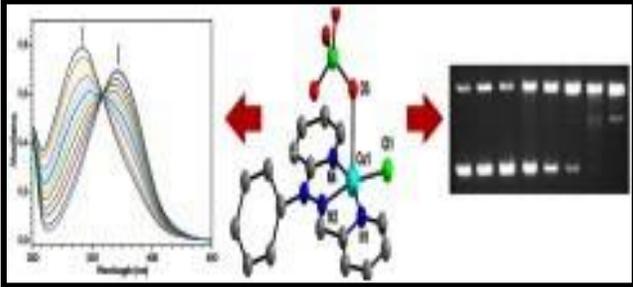
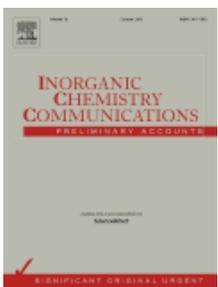
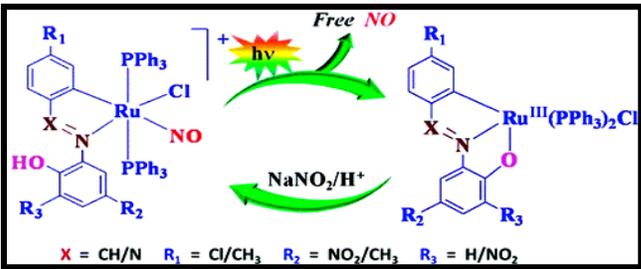
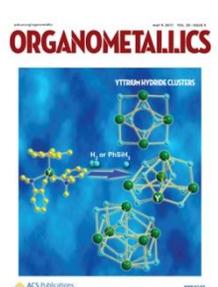
13. Reactions of NO with Mn(II) and Mn(III) center coordinated to carboxamido nitrogen: synthesis of a manganese nitrosyl with photolabile NO **Kaushik Ghosh**, Alegra Eroy-Reveles, Belem Avila, Marilyn Olmstead, Theodore R. Holman, Pradip K. Mascharak *Inorg. Chem.*, **2004**, 43, 2988-97.
14. Reductive 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.

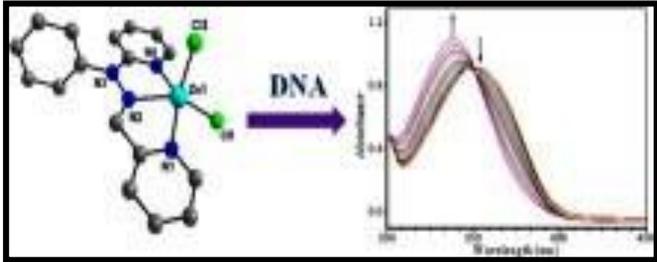
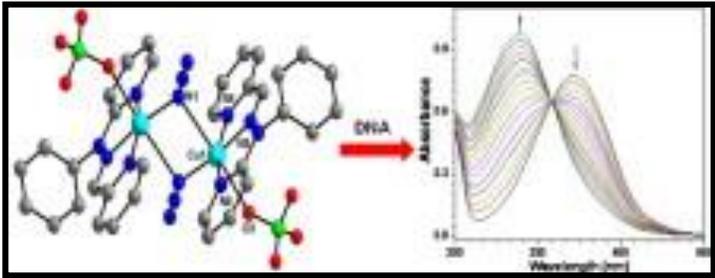
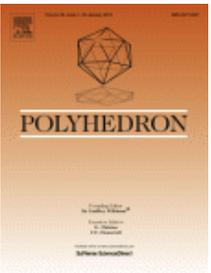
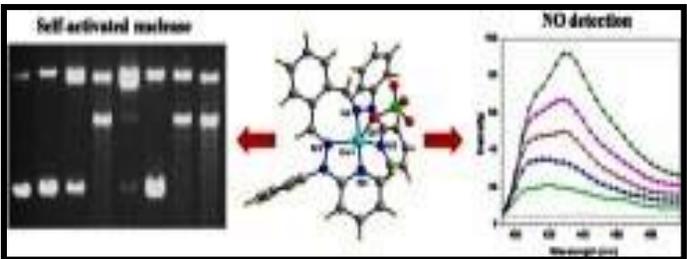
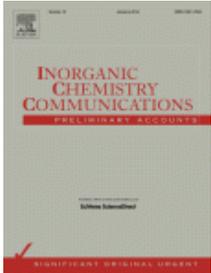
Recent Publications (from IIT Roorkee, India):

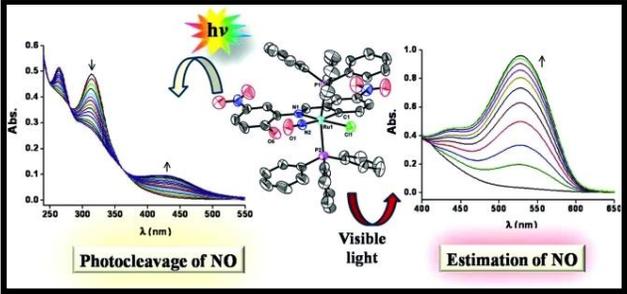
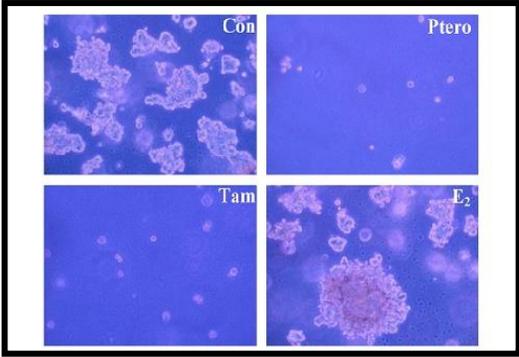
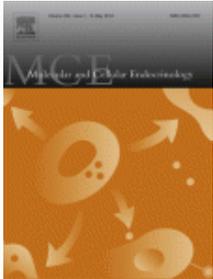
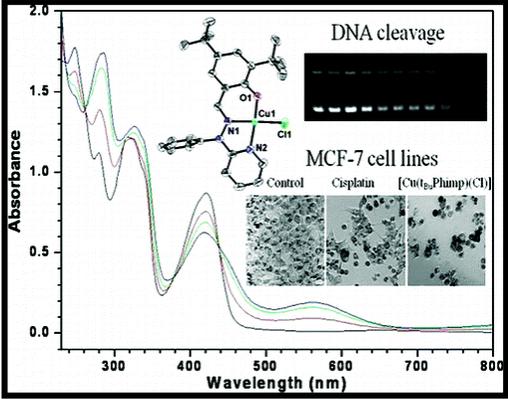
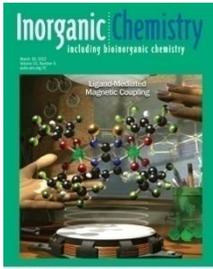
16.	<p>Stabilization of Mn(II) and Mn(III) in mononuclear complexes derived from tridentate ligands with N₂O donors: Synthesis, crystal structure, superoxide dismutase activity and DNA interaction studies</p>  <p>The figure shows a ball-and-stick model of a manganese complex on the left, with a red arrow pointing to a UV-Vis absorption spectra plot on the right. The plot shows absorbance versus wavelength (nm) from 200 to 600 nm, with multiple curves representing different conditions.</p>	<p><u>Kaushik Ghosh</u>, Nidhi Tyagi, Pramod Kumar, Udai P. Singh, Nidhi Goel, <i>J. Inorg. Biochem.</i> 2010, 104, 9-18</p>	 <p>The image shows the cover of the journal 'Journal of Inorganic Biochemistry', featuring a molecular structure illustration.</p>
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<p>17.</p>	<p>Role of carboxamido nitrogen in mononuclear manganese complex: Superoxide scavenging activity and nuclease activity</p> 	<p>Kaushik Ghosh, Nidhi Tyagi, Pramod Kumar, <i>Inorg. Chem. Commun.</i> 2010, <i>13</i>, 380-383.</p>	
<p>18.</p>	<p>Synthesis and reactivity studies on new copper(II) complexes: DNA binding, generation of phenoxyl radical, SOD and nuclease activity</p> 	<p>Kaushik Ghosh, Pramod Kumar, Nidhi Tyagi, Udai P. Singh, Vaibhava Aggarawal, Maria Camilla Baratto, <i>Eur. J. Med. Chem.</i> 2010, <i>45</i>, 3770-3779.</p>	
<p>19.</p>	<p>Oxidative cyclization of a phenolic 11harac base and synthesis of a Cyclometalated Ruthenium nitrosyl complex: Photoinduced NO release by visible light</p> 	<p>Kaushik Ghosh, Sushil Kumar, Rajan Kumar, Udai P. Singh, Nidhi Goel, <i>Inorg. Chem.</i> 2010, <i>49</i>, 7235-7237.</p>	

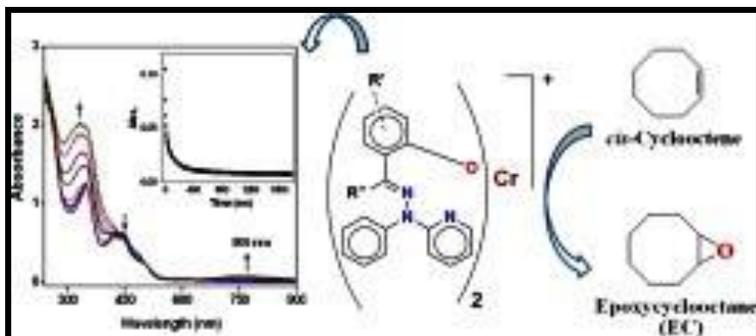
<p>20.</p>	<p>Novel diphenoxo-bridged dinuclear zinc complexes: Generation of phenoxyl-radical species and nuclease activity</p> 	<p>Kaushik Ghosh, Pramod Kumar, Nidhi Tyagi, Uday P. Singh, <i>Inorg. Chem.</i> 2010, 49, 7614-16.</p>	
<p>21.</p>	<p>In vitro evaluation of the cytotoxic, anti-proliferative and anti-oxidant properties of pterostilbene isolated from <i>Pterocarpus marsupium</i></p> 	<p>Ajanta Chakraborty, Neetu Gupta, Kaushik Ghosh, Partha Roy <i>Toxicology in Vitro</i>, 2010, 24, 1215-1228.</p>	
<p>22.</p>	<p>Evaluation of a Schiff base copper complex compound as potent anticancer molecule with multiple targets of action</p> 	<p>Ajanta Chakraborty, Pramod Kumar, Kaushik Ghosh, Partha Roy, <i>Eur. J. Pharmacol.</i>, 2010, 647, 1-12.</p>	

<p>23.</p>	<p>Synthesis and characterization of a novel ruthenium nitrosyl complex and studies on photolability of coordinated NO</p> 	<p>Kaushik Ghosh, Sushil Kumar, Rajan Kumar, <i>Inorg. Chem. Commun.</i> 2011, <i>14</i>, 146-149.</p>	
<p>24.</p>	<p>Synthesis, structural characterization and DNA interaction studies on a novel copper complex: Nuclease activity via self-activation</p> 	<p>Kaushik Ghosh, Prmod Kumar, Nidhi Tyagi, Udai P. Singh, Nidhi Goel, <i>Inorg. Chem. Commun.</i> 2011, <i>14</i>, 489-92.</p>	
<p>25.</p>	<p>Photocleavage of coordinated NO under visible light from two different classes of organometallic ruthenium nitrosyl complexes: Reversible binding of phenolato function</p>  <p>$X = \text{CH/N}$ $R_1 = \text{Cl/CH}_3$ $R_2 = \text{NO}_2/\text{CH}_3$ $R_3 = \text{H/NO}_2$</p>	<p>Kaushik Ghosh, Sushil Kumar, Rajan Kumar, Udai P. Singh, Nidhi Goel <i>Organometallics</i> 2011, <i>30</i>, 2498-2505.</p>	

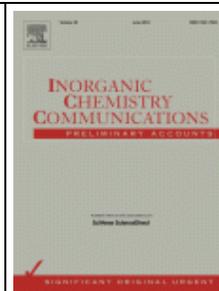
<p>26.</p>	<p>Synthesis, crystal structure and DNA interaction studies on mononuclear zinc complexes</p> 	<p>Kaushik Ghosh, Pramod Kumar, Nidhi Tyagi <i>Inorg. Chim. Acta.</i>, 2011, 375, 77-83.</p>	
<p>27.</p>	<p>DNA interaction, superoxide scavenging and cytotoxicity studies on new copper(II) complexes derived from a tridentate ligand</p> 	<p>Kaushik Ghosh, Pramod Kumar, Nidhi Tyagi, Udai P. Singh, Nidhi Goel, Ajanta Chakravorty, Partha Roy, Maria Camilla Baratto <i>Polyhedron</i>, 2011, 30, 2667-2677.</p>	
<p>28.</p>	<p>Self-activated DNA cleavage and NO reactivity studies on mononuclear copper complexes</p> 	<p>Kaushik Ghosh, Pramod Kumar, Varun Mohan, Udai P. Singh <i>Inorg. Chem. Commun.</i>, 2012, 15, 56-60.</p>	

<p>29.</p>	<p>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</p> 	<p>Kaushik Ghosh, Sushil Kumar, Rajan Kumar, Udai P. Singh <i>Eur. J. Inorg. Chem.</i> 2012, 6,929-938.</p>	
<p>30.</p>	<p>Long term induction by pterostilbene results in autophagy and cellular differentiation in MCF-7 cells via ROS dependent pathway</p> 	<p>Ajanta Chakraborty, Naganjaneyulu Bodipati, Marija Krstic Demonacos, Ramakrishna Peddinti Kaushik Ghosh Partha Roy <i>Molecular and Cellular Endocrinology</i> 2012, 355, 25-40.</p>	
<p>31.</p>	<p>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</p> 	<p>Kaushik Ghosh, Prmod Kumar, Varun Mohan, Udai P. Singh, Sahba Kasiri, and Subhrangsu S. Mandal <i>Inorg. Chem.</i>, 2012, 51, 3343-3345.</p>	

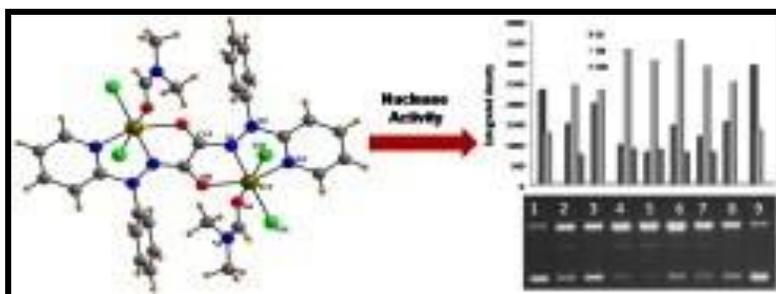
32. **Synthesis and characterization of chromium (III) complexes derived from tridentate ligands: Generation of phenoxyl radical and catalytic oxidation of olifines**



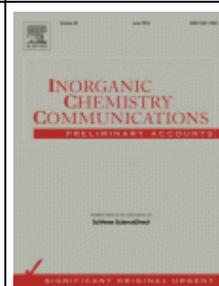
Kaushik Ghosh, Pramod Kumar, Isha Goel, *Inorg. Chem. Commun.* **2012**, *24*, 81-86.



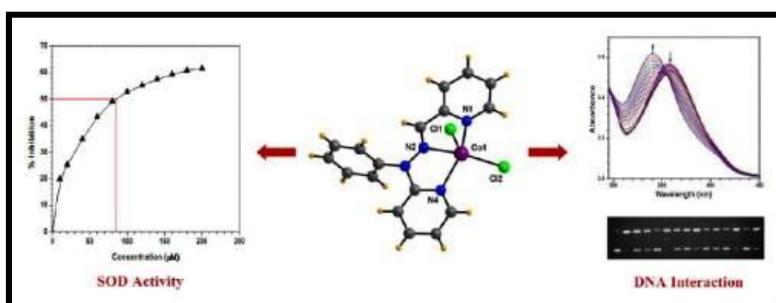
33. **Efficient nuclease activity of dinuclear iron(III) complex with ligand having carboxamido nitrogen donors**



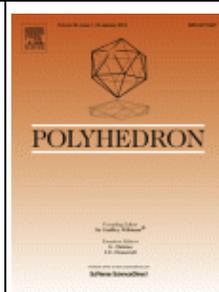
Kaushik Ghosh, Nidhi Tyagi, Pramod Kumar, Sweety Rathi, Udai P. Singh *Inorg. Chem. Commun.* **2012**, *20*, 167-171.



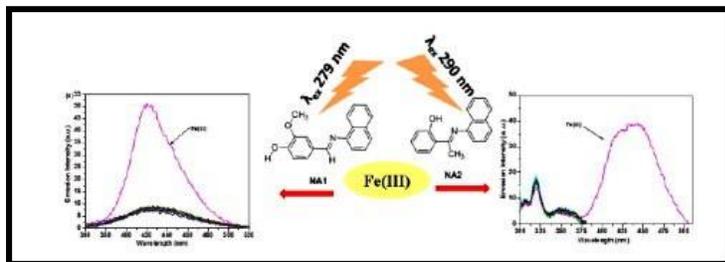
34. **DNA binding, nuclease and superoxide scavenging activity studies on mononuclear cobalt complexes derived from tridentate ligands**



Kaushik Ghosh, Varun Mohan, Pramod Kumar, Udai P. Singh, *Polyhedron* **2013**, *49*, 167-176.



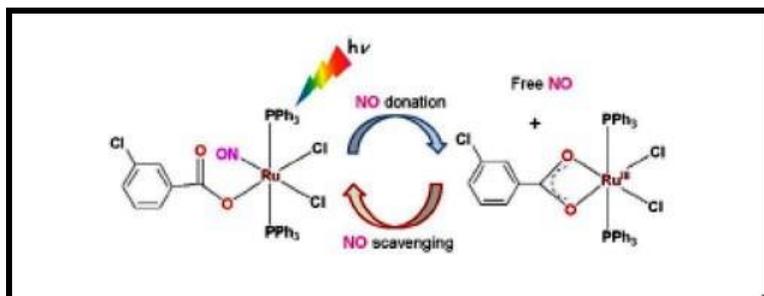
35. Sensing of Fe(III) ion via turn-on fluorescence by fluorescence probes derived from 1-naphthylamine



Kaushik Ghosh,
Sweety Rathi, Ritu
Kushwaha, *Tett. Lett.*
2013, 54, 6460-6463.



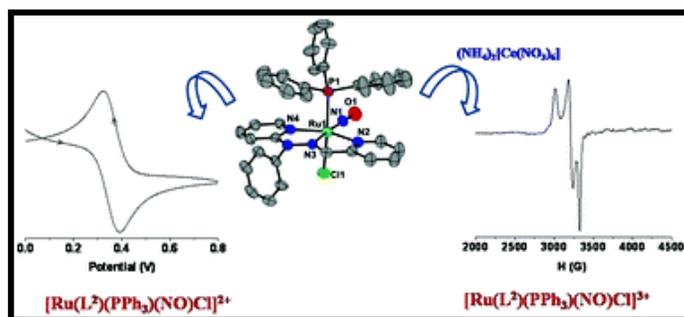
36. Donation and scavenging of nitric oxide (NO) by flipping of the denticity of carboxylate ligand in novel ruthenium complexes: Photolability of the coordinated NO



Kaushik Ghosh,
Sushil Kumar, Rajan
Kumar, *Inorg. Chim.*
Acta, 2013, 405, 24-30.



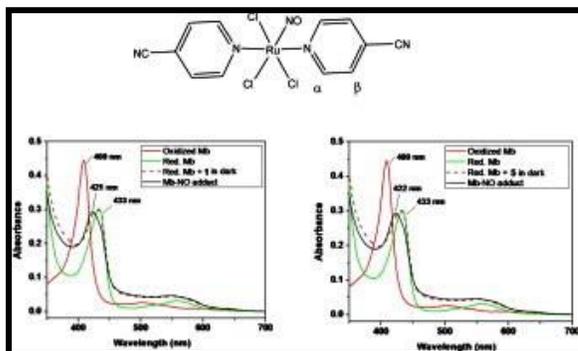
37. Syntheses, structures and properties of ruthenium complexes of tridentate ligands: isolation and characterization of a rare example of ruthenium nitrosyl complex containing {RuNO}⁵ moiety



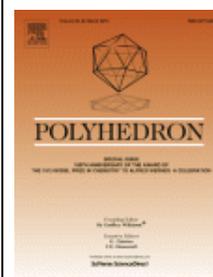
Kaushik Ghosh,
Rajan Kumar, Sushil
Kumar, Udai P. Singh,
Dalton Trans.,
2013,42, 13444-13452.



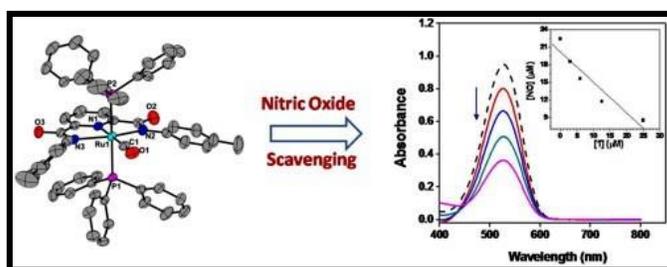
38. **Synthesis, characterization and photochemical properties of some ruthenium nitrosyl complexes**



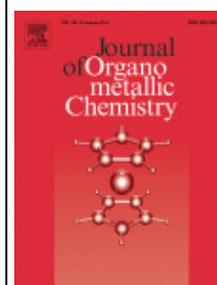
Amit Kumar, Rampal Pandey, Rakesh Kumar Gupta, **Kaushik Ghosh**, Daya Shankar Pandey, *Polyhedron*, **2013**, 52, 837-843



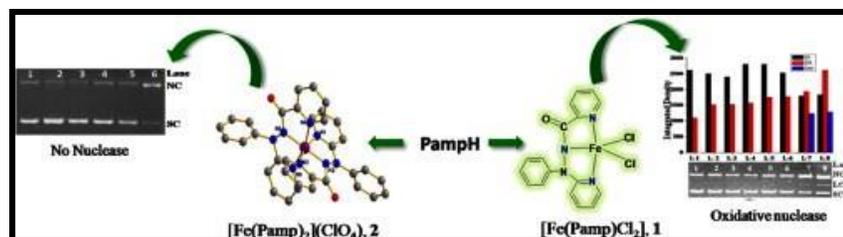
39. **Ruthenium(II) complexes derived from the ligands having carboxamide groups: Reactivity and scavenging of nitric oxide (NO)**



Kaushik Ghosh, Sushil Kumar, Rajan Kumar, Udai P. Singh *J. Organomet. Chem.* **2014**, 750, 169-175.



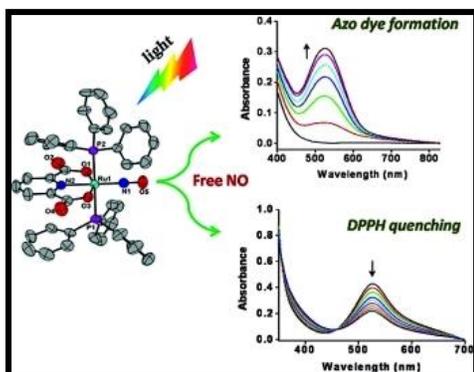
40. **Synthesis, structure, redox properties and DNA interaction studies on mononuclear iron(III) complexes with amidate ligand**



Kaushik Ghosh, Nidhi Tyagi, Pramod Kumar, Udai P. Singh, *Inorg. Chim. Acta* **2014**, 412, 20-26.



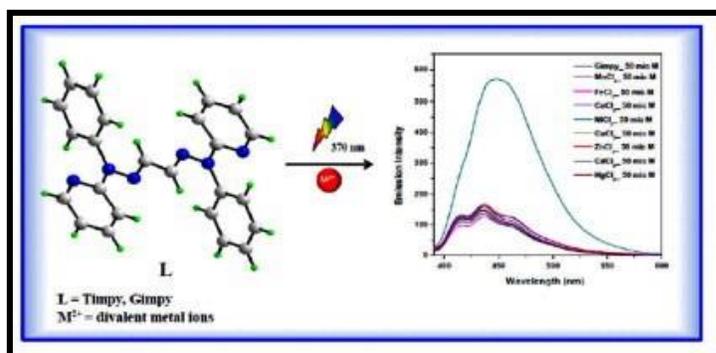
41. **Ruthenium nitrosyl complexes derived from ligands containing two carboxylate functional groups and studies on photolability of coordinated NO**



Kaushik Ghosh,
Sushil Kumar, Rajan Kumar *Eur. J. Inorg. Chem.* **2014**, 9,1454-1461.



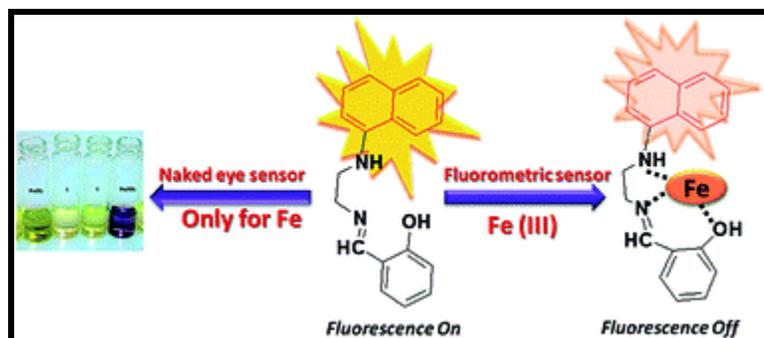
42. **Selective fluorescence sensing of Ni²⁺ by tetradentate ligands: Synthesis of nickel complexes and crystal structures**



Kaushik Ghosh,
Varun Mohan, Pramod Kumar, S.W. Ng, E.R.T. Tiekink *Inorg. Chim. Acta*, **2014**, 416,76–84.



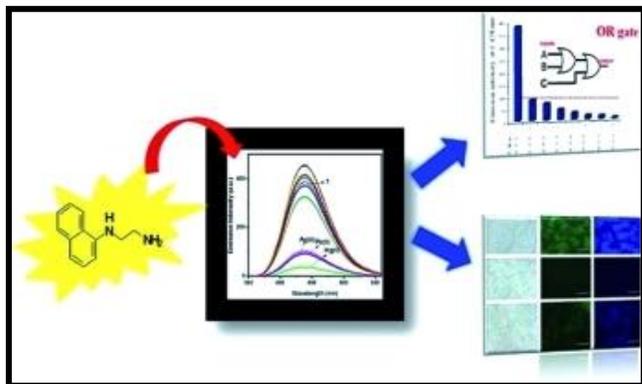
43. **A novel probe for selective colorimetric sensing of Fe(II) and Fe(III) and specific fluorometric sensing of Fe(III): DFT calculation and logic gate application**



Kaushik Ghosh and Sweety Rathi *RSC Adv.* **2014**, 4, 48516-48521.



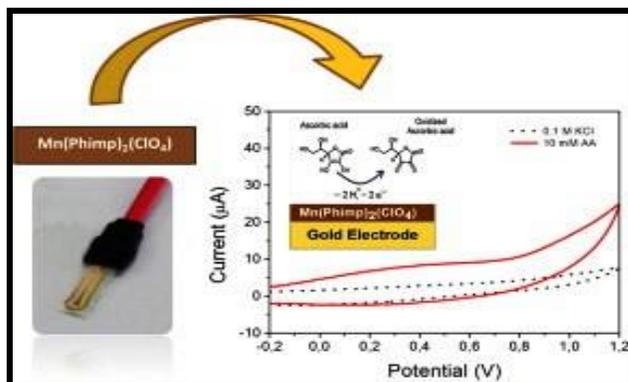
44. **A Simple Fluorescent Probe Derived from Naphthylamine for Selective Detection of Hg^{II} , Fe^{II} and Fe^{III} Ions in Mixed Aqueous Media: Applications in Living Cells and Logic Gate**



Kaushik Ghosh, Sweety Rathi, Pankaj Gupta, Priya Vashisth and Vikas Pruthi *Eur. J. Inorg. Chem.*, **2014**, 2, 311-317.



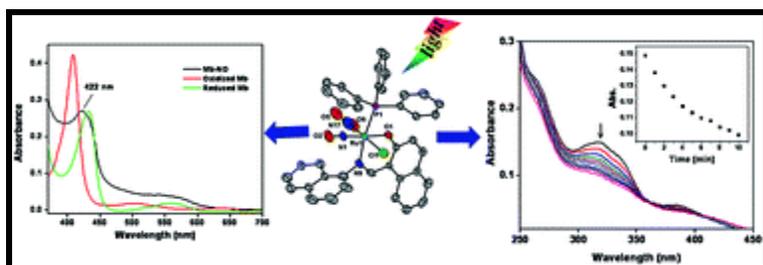
45. **Electrochemical sensing of ascorbic acid by a novel manganese (III) complexes**



S.G. Leonardi, D. Alioio, N. Donao, Sweety Rathi, **Kaushik Ghosh**, G. Neri *Mater. Lett.*, **2014**, 133, 232-235.



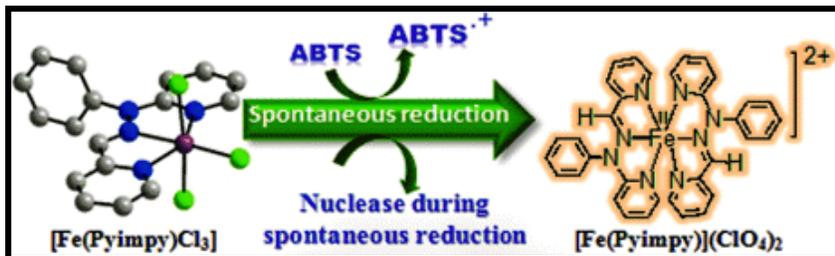
46. **Reactivity of nitric oxide with ruthenium complexes derived from bidentate ligands: structure of a ruthenium nitrosyl complex, photoinduced generation and estimation of nitric oxide**



Kaushik Ghosh, Rajan Kumar, Kapil Kumar, Anand Ratnam and U. P. Singh *RSC Adv.*, **2014**, 4, 43599-43605



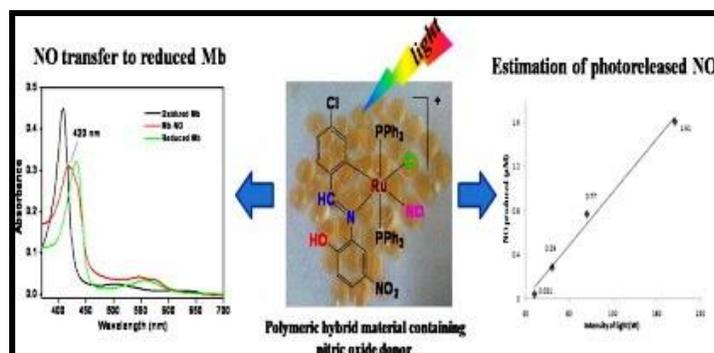
47. **Spontaneous Reduction of Mononuclear High-Spin Iron(III) Complexes to Mononuclear Low-Spin Iron(II) Complexes in Aqueous Media and Nuclease Activity via Self-Activation**



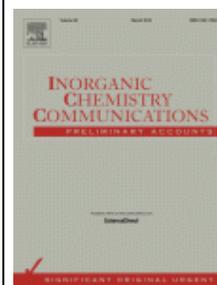
Kaushik Ghosh, Nidhi Tyagi, Ashish Kumar Dhara and Udai P Singh
Chemistry Asian J., 2015, 10, 350-361.



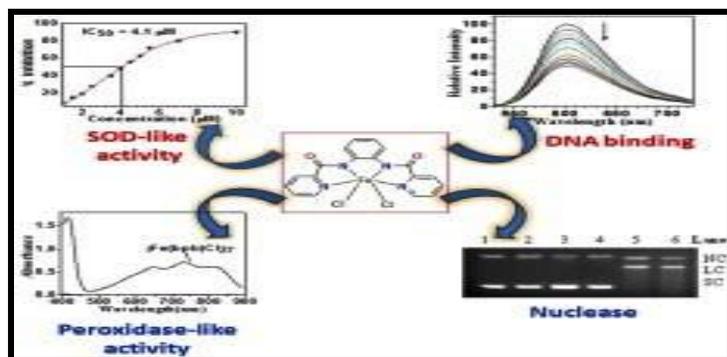
48. **Novel drug delivery system for photoinduced nitric oxide (NO) delivery**



Sushil Kumar, Rajan Kumar, Anand Ratnam, Narayan C. Mishra, **Kaushik Ghosh**
Inorg. Chem. Commun., 2015, 53, 23-25.

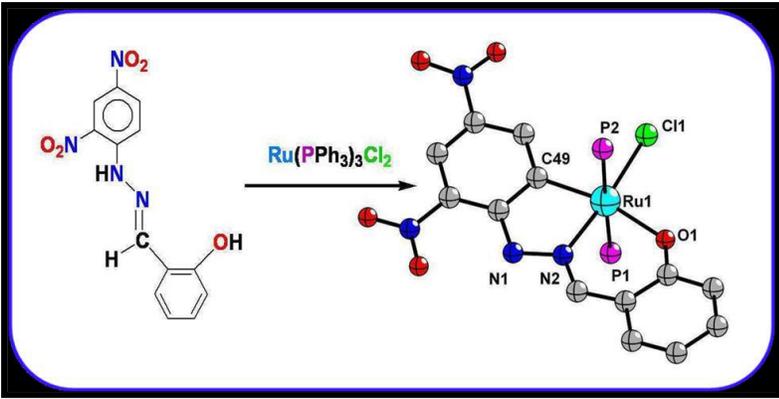
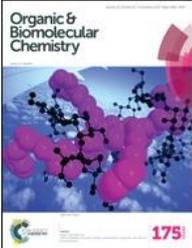


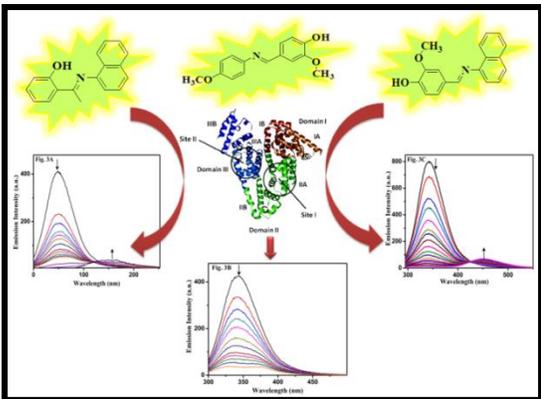
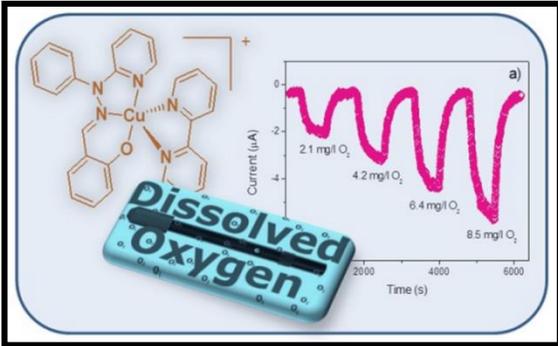
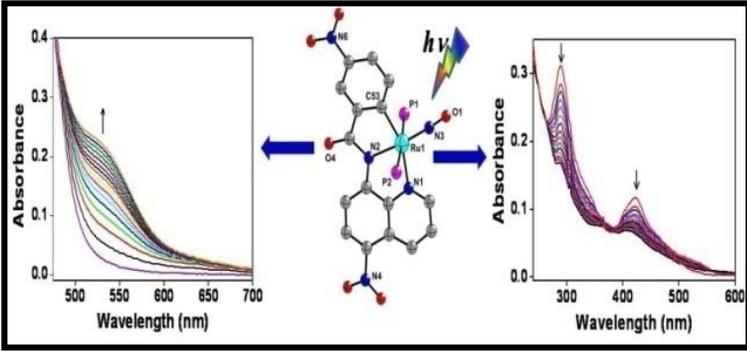
49. **DNA interaction, SOD, peroxidase and nuclease activity studies of iron complex having ligand with carboxamido nitrogen donors**

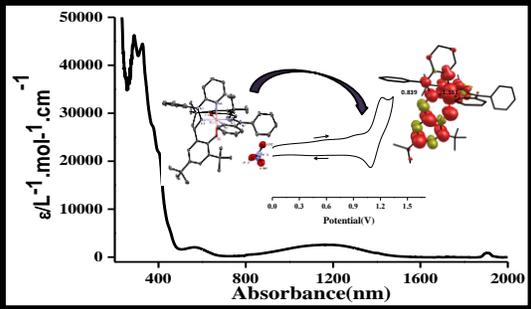
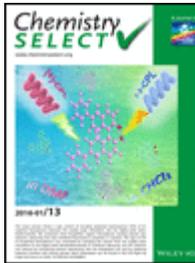
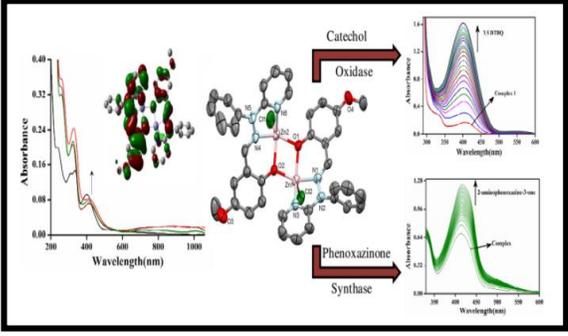
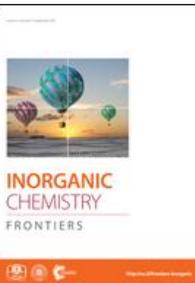
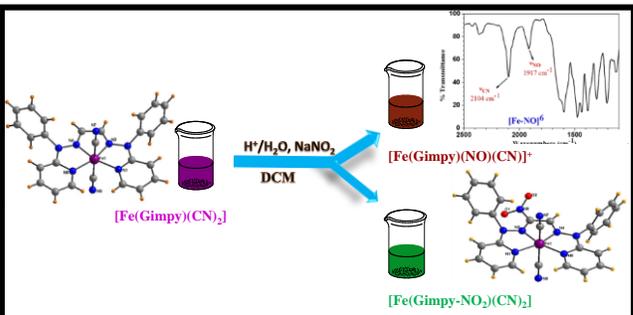


Kaushik Ghosh, Nidhi Tyagi, Hemant Kumar, Sweeti Rathi
Spectrochim. Acta Part A. 2015, 146, 292-296.



<p>50.</p>	<p>Orthometallation in bidentate Schiff base ligands via C-H activation and syntheses of Ruthenium(III) organometallic and studies on mechanism</p> 	<p>Kaushik Ghosh, Rajan Kumar, Sushil Kumar, Manju Bala, Udai P. Singh <i>Transition Met. Chem.</i> 2015, <i>40</i>, 831-837.</p>	
<p>51.</p>	<p>Mononuclear iron complexes derived from tridentate ligands : Synthesis, characterization, DFT calculations and DNA interaction studies” (In honour of Professor Animesh Chakravorty on the occasion of his 80th birth anniversary)</p>	<p>Sweety Rathi, Ankur Maji, Ovender Singh and Kaushik Ghosh <i>J. Indian Chem. Soc.</i>, 2015, <i>92</i>, 1913-1924.</p>	
<p>52.</p>	<p>Mononuclear iron(III) complexes of tridentate ligands with efficient nuclease activity and studies of their cytotoxicity</p> 	<p>Nidhi Tyagi, Ajanta Chakraborty, Udai P. Singh, Partha Roy, Kaushik Ghosh, <i>Org. Biomol. Chem.</i> 2015, <i>13</i>, 11445-11458.</p>	

<p>53.</p>	<p>Fluorescence spectral studies on interaction of fluorescent probes with Bovine Serum Albumin (BSA)</p> 	<p>Kaushik Ghosh , Sweety Rathi, Deepshikha Arora <i>J. Lumin.</i> 2016, 175,135-140.</p>	
<p>54.</p>	<p>Development of a Novel Cu(II) Complex Modified Electrode and a Portable Electrochemical Analyzer for the Determination of Dissolved Oxygen (DO) in Water</p> 	<p>Salvatore Gianluca Leonardi, Maryam Bonyani, Kaushik Ghosh, Ashish K. Dhara, Luca Lombardo, Nicola Donato, Giovanni Neri <i>Chemosensors</i> 2016, 4, 7.</p>	
<p>55.</p>	<p>Site-specific orthometallation via C–H bond activation and syntheses of ruthenium(III) organometallics: studies on nitric oxide (NO) reactivity and photorelease of coordinated NO</p> 	<p><u>RajanKumar</u>, <u>SushilKumar</u>, <u>Manju Bala</u>, <u>Anand Ratnam</u>, U.P. Singh KaushikG hosh <i>RSC Adv.</i>, 2016, 6, 72096-72106</p>	

<p>56.</p>	<p>Non-Innocent Property of Tridentate Ligand in Novel Cobalt Complex : Crystal Structure and Evidences for Cobalt(II) Phenoxyl Radical Complex Formation</p> 	<p>Ashish Kumar Dhara, Kapil Kumar, Sheela Kumari, Prof. Udai P. Singh Kaushik Ghosh <i>ChemistrySelect</i> 2016, 1, 3933–3937</p>	
<p>57.</p>	<p>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</p> 	<p>Kaushik Ghosh, Ashish Kumar Dhara and Udai P Singh <i>Inorg. Chem. Front.</i> 2016, 3, 1543–1558.</p>	
<p>58.</p>	<p>Nitric oxide (NO) reactivity studies on mononuclear Iron(II) complexes supported by a tetradentate Schiff base Ligand</p> 	<p>Nidhi Tyagi, Ovender Singh, Udai P. Singh, Kaushik Ghosh, <i>R.Sc. Adv.</i>, 2016, 6, 115326-115333.</p>	

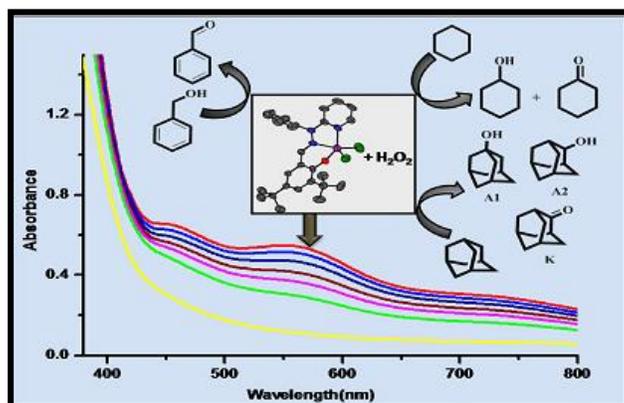
59. **Non-heme iron(III) complex with tridentate ligand: Synthesis, structures and catalytic oxidations of alkane**



Nidhi Tyagi,
Ovender Singh,
Kaushik Ghosh,
Catal. Commun.,
2017, 95,83-87.



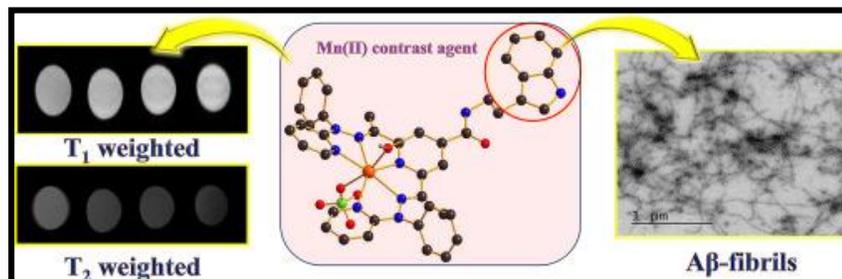
60. **Oxidation chemistry of C-H bond by mononuclear iron complexes derived from tridentate ligands containing phenolato function**



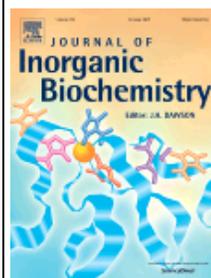
Atul Choudhary,
Ovender Singh,
Udai P. Singh,
Kaushik Ghosh
Inorg. Chim. Acta
2017,464, 195-203.

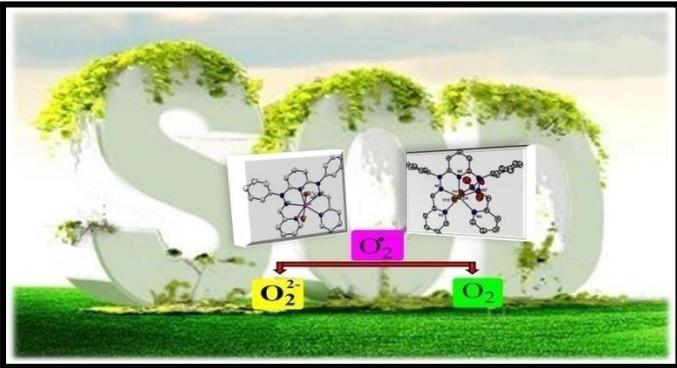
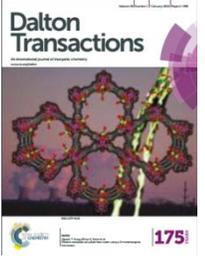
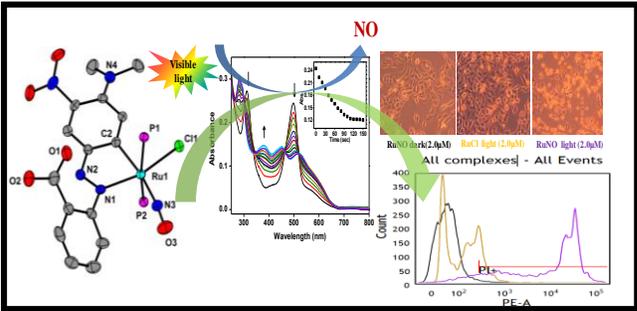
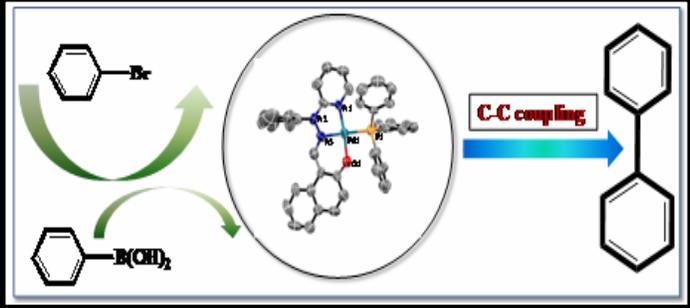
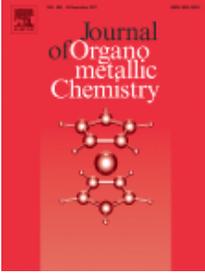


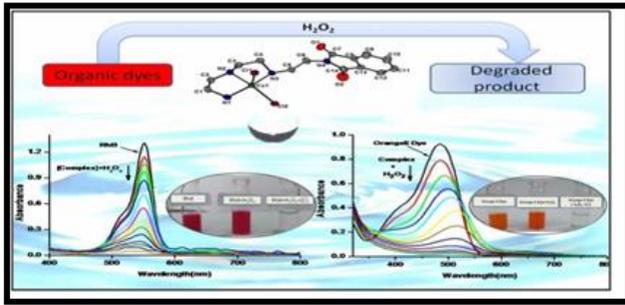
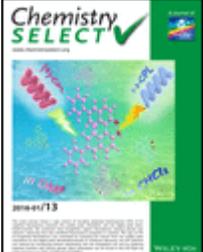
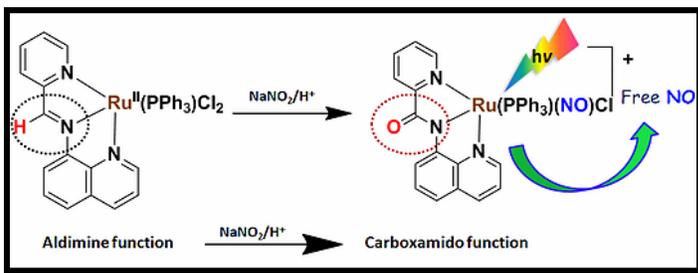
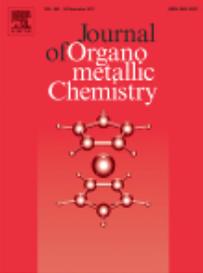
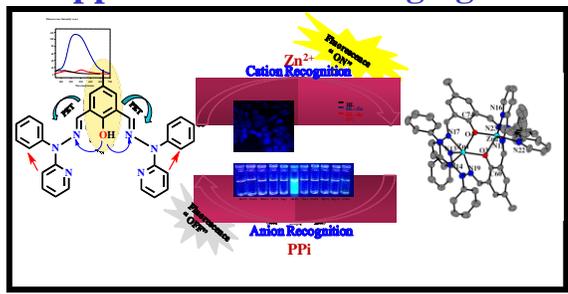
61. **Mn(II) based T₁ and T₂ potential MRI contrast agent appended with tryptamine: Recognition moiety for A β -plaques**

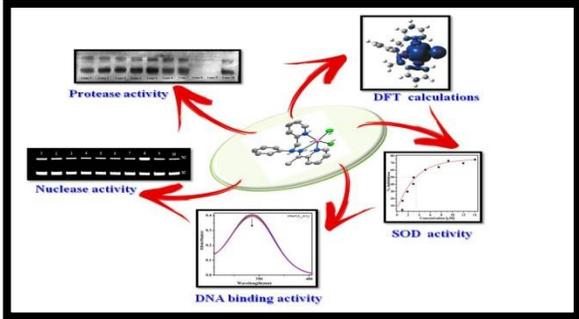
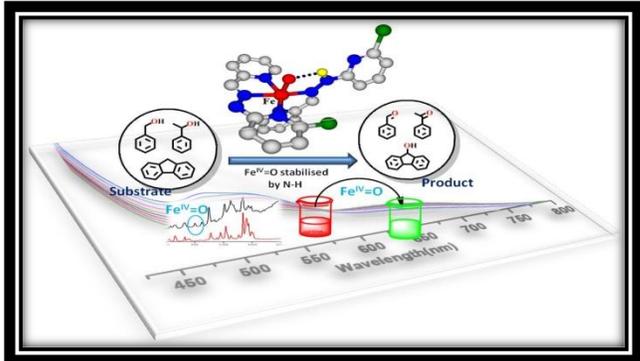
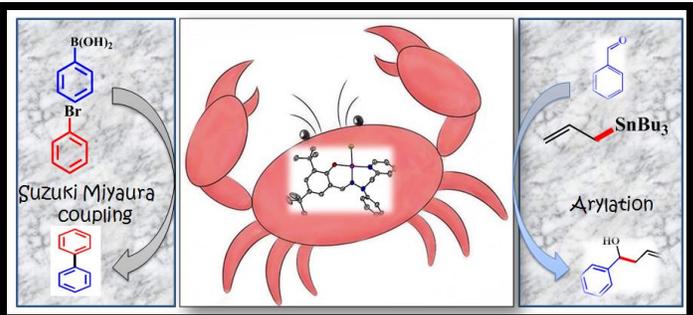


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Nidhi Tyagi ,
Ovender Singh ,
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Kumar , Udai P.
Singh , **Kaushik
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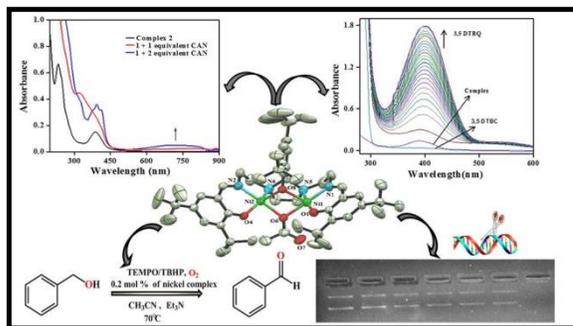


<p>62.</p>	<p>Design of Synthetic Superoxide Dismutase Mimetics: SevenCoordinate Water Soluble Manganese(II) and Iron(II) Complexes and Their Superoxide Dismutase Like Activity Studies</p> 	<p>Ovender Singh , Nidhi Tyagi , Marilyn M. Olmstead , Kaushik Ghosh <i>Dalton Trans.</i> 2017, 46, 14186-14191.</p>	
<p>63.</p>	<p>Organometallic ruthenium nitrosyl obtained by C-H bond activation: Photo-induced delivery of nitric oxide (NO) and NO-mediated anti-proliferation activity studies</p> 	<p>Rajan Kumar, Anjlika, Anand Ratnam, Sushil Kumar, Manju Bala, Debpali Sur, Shikha Narang, U. P. Singh, Prabhat Mandal, Kaushik Ghosh <i>Eur. J. Inorg. Chem.</i>, 2017, 5334-5343.</p>	
<p>64.</p>	<p>Design and syntheses of a new family of palladium complexes derived from tridentate ligands and their application as catalysts for Suzuki-Miyaura cross-coupling reactions</p> 	<p>Anand Ratnam, Manju Bala, Rajan Kumar, U.P. Singh, Kaushik Ghosh <i>J. Organomet. Chem.</i>, 2018, 856, 41-49.</p>	

<p>65.</p>	<p>Water soluble copper [Cu(TETA^{TA})(Cl₂)](1) complex derived from tridentate ligand, synthesized and characterized by spectroscopic studies and X-ray crystal structure. Complex was efficient in oxidative degradation of organic dyes and exhibited catecholase and phenoxazinone synthase activities</p> 	<p>Ovender Singh, Ankur Maji, Udai P. Singh, Kaushik Ghosh <i>ChemistrySelect</i>, 2018, 3, 2968 – 2975.</p>	
<p>66.</p>	<p>Unprecedented oxidation of aldimine to carboxamido function during reactivity studies on ruthenium complex with acidified nitrite solution: Synthesis of ruthenium nitrosyl complex having {RuNO}6 moiety and photorelease of coordinated NO</p> 	<p>Rajan Kumar, Sushil Kumar, Manju Bala, Anand Ratnam, U. P. Singh, and Kaushik Ghosh <i>J. Organomet. Chem.</i>, 2018, 863, 77-83.</p>	
<p>67.</p>	<p>Combined experimental and theoretical studies on selective sensing of zinc and pyrophosphate ions by rational designing of compartmental chemosensor probe: Dual sensing behaviour via secondary recognition approach and cell imaging studies</p> 	<p>Kiran Mawai, Sandip Nathani, Partha Roy, U.P. Singh, Kaushik Ghosh <i>Dalton Trans.</i>, 2018, 47, 6421-6434.</p>	

<p>68.</p>	<p>Manganese (II) Complexes of Tridentate Ligands having NNN Donor: Structure, DFT Calculations, Superoxide dismutase, DNA Interaction, Nuclease and Protease Activity Studies</p> 	<p>Sweety Rathi, Ankur Maji, U. P. Singh and Kaushik Ghosh <i>Inorg. Chim. Acta</i> 2019, <i>486</i>, 261–273.</p>	
<p>69.</p>	<p>Selective oxidation of benzyl alcohol to benzaldehyde, 1-phenylethanol to acetophenone and fluorene to fluorenol catalysed by iron(II) complexes supported by pincer-type ligands: Studies on rapid degradation of organic dyes</p> 	<p>Ovender Singh, Priyanka Gupta, Anshu Singh, Ankur Maji, Udai P. Singh, Kaushik Ghosh <i>Appl. Organomet. Chem.</i>, 2019, <i>33</i>, 1–12.</p>	
<p>70.</p>	<p>Rational Design of Sterically Hindered and Unsymmetrical NpyNimOph Pincer-Type Ligands and Their Palladium(II) Complexes: Catalytic Applications in Suzuki–Miyaura Reaction and Allylation of Aldehydes</p> 	<p>Ankur Maji, Ovender Singh, Sweety Rathi, U.P Singh and Kaushik Ghosh <i>ChemistrySelect</i>, 2019, <i>4</i>, 7246–7259.</p>	

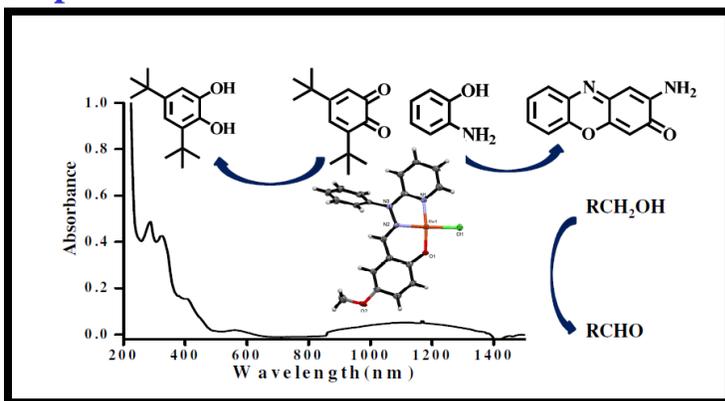
71. **The influence of the tertiary butyl group in the ligand frame on the catalytic activities, DNA cleavage ability and cytotoxicity of dinuclear nickel(II) complexes**



Kapil Kumar, Ashish Kumar Dhara, Virendra Kumar Chaudhary, Nathani Sandip, Partha Roy, Pankaj Verma, Kaushik Ghosh *Inorg. Chim. Acta.*, 2019, 495, 118993-119002.

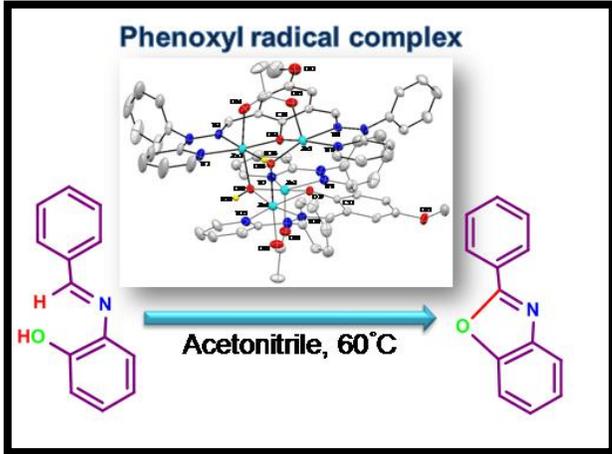
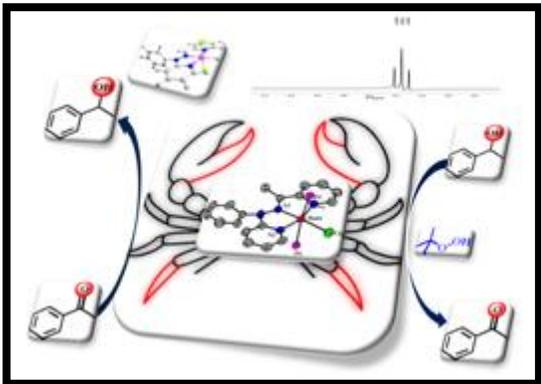


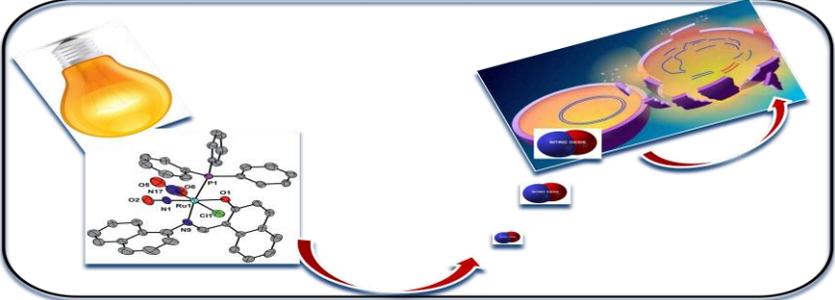
72. **Aerobic oxidation of alcohol by model complexes relevant to metal site galactose oxidase: Role of Cu(I) intermediate, evidence for the generation of end-on Cu(II)-OOH species and catalytic promiscuity for oxidation of benzyl alcohol, catechol and o-aminophenol**



Ashish Kumar Dhara, Kapil Kumar, Sheela Kumari, U. P. Singh and Kaushik Ghosh *Appl. Organomet. Chem.*, 2018, 000, 000-000. (Submitted)

Communicated

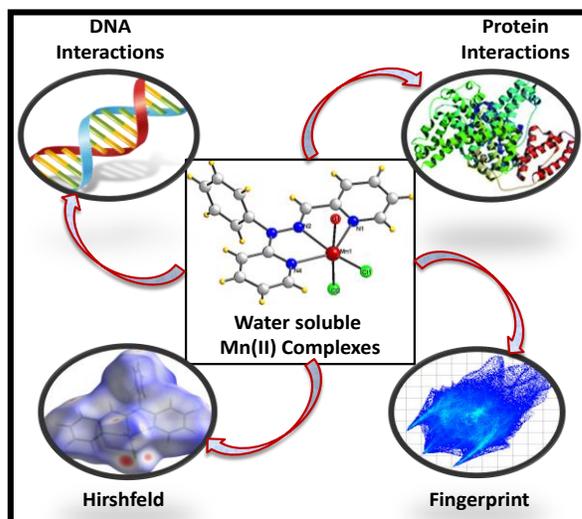
<p>73.</p>	<p>Crystal structure of Class III zinc phenoxyl radical complex obtained by one-pot synthesis: C-H bond activation and synthesis of benzoxazole derivative via hydrogen atom transfer</p> 	<p>Kiran Mawai, Mayank Joshi, Angshuman Roy Choudhary and Kaushik Ghosh</p>	<p>Communicated</p>
<p>74.</p>	<p>Transfer hydrogenation via generation of hydride intermediate and base-free alcohol oxidation activity studies on designed ruthenium complexes derived from NNN pincer type ligands</p> 	<p>Prasoon Raj Singh, Ankur Maji, Ovender Singh, U. P Singh and Kaushik Ghosh <i>New J. Chem.</i> (Submitted)</p>	<p>Communicated</p>

75.	<p>Novel ruthenium (III) complexes synthesized from phenolate-imine ligands and utilized toward oxidation of benzyl alcohol</p>	<p>Anand Ratnam, Manju Bala, Kiran Mawai, Rajan kumar, U.P. Singh, Kaushik Ghosh <i>Journal of Catalysis</i>.(Submitted)</p>	Communicated
76.	<p>Photo-induced release of nitric oxide (NO) from ruthenium nitrosyl complexes displays potent antiStaphylococcal activity</p> 	<p>Anand Ratnam Atin Sharma Rajan Kumar Sushil Kumar Ranjana Pathania Kaushik Ghosh</p>	Communicated
77.	<p>Remarkable effect of position of carboxamido nitrogen in bidentate ligands to achieve the syntheses of organometallic ruthenium nitrosyls via C-H bond activation: Studies on cytotoxicity of nitric oxide (NO) liberated under visible light and evidences for apoptotic cell death</p> 	<p>Manju Bala, Debpali Sur, Anand Ratnam, Rajan Kumar, U. P. Singh, Prabhat K. Mandal, Kaushik Ghosh</p>	Communicated

78. **Water-Soluble Biogenic Manganese(II) Complexes: Synthesis, Crystal Structure and Bio-Macromolecular Interaction Studies**

Nidhi Tyagi, Ovender Singh, Rakesh K. Mishra, and Kaushik Ghosh

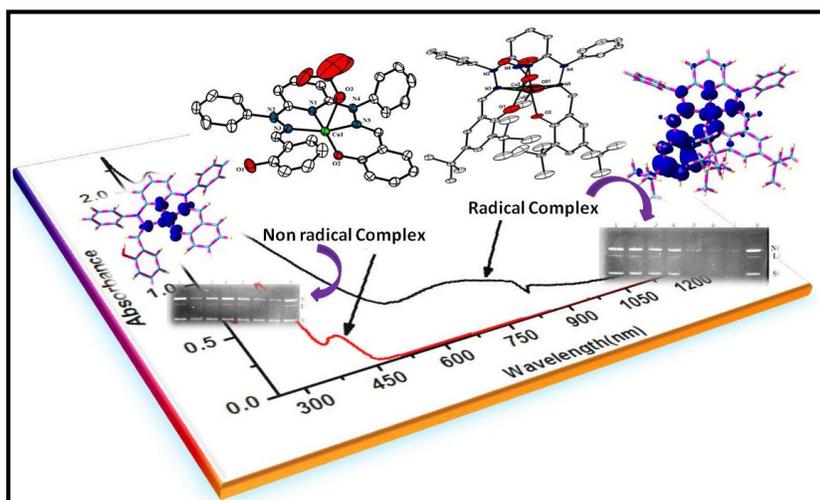
Communicated



79. **Crystal structure of phenoxyl radical complex of copper derived from pentadentate ligand: A facile one pot synthesis and mimicking of active form of galactose oxidase enzyme**

Ovender Singh, Neetu Singh, Udai P. Singh and Kaushik Ghosh

Communicated



Conferences/workshops:

1.	Participated in National Workshop on “ <i>Techniques and challenges for structure solution in chemical crystallography</i> ” organized by Department of Chemistry, IIT Roorkee. Sept. 2007.
2.	Synthesis, structure and properties of mononuclear manganese complexes, <u>Kaushik Ghosh</u> , Nidhi Tyagi, Pramod Kumar, B. Varghese, “ <i>Modern Trends in Inorganic Chemistry-XII</i> ” at IIT Madras during 6-8 Dec, 2007.
3.	Synthesis and characterization of cycloruthenated nitrosyl complexes and their photolability studies, <u>Kaushik Ghosh</u> , Sushil Kumar, Varun Mohan, Akash Mittal, Pramod Kumar, Nidhi “ <i>4th Asian Biological Inorganic Chemistry Conference (ASBIC-2008)</i> ” at Jeju, Korea during Nov 10-13, 2008.
4.	SOD activity and DNA interaction studies of mononuclear manganese complexes: Role of carboxamido nitrogen, <u>Kaushik Ghosh</u> , Nidhi Tyagi, Pramod Kumar, “ <i>Modern Trends in Inorganic Chemistry-XIII</i> ” 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, <u>Kaushik Ghosh</u> , “ <i>Modern Trends in Inorganic Chemistry-XIII</i> ” 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, <u>Kaushik Ghosh</u> , U. P. Singh, M. C. Baratto, “ <i>School and Symposium on Advanced Biological Inorganic Chemistry (SABIC-2009)</i> ” 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 complex, <u>Kaushik Ghosh</u> , Sushil Kumar, Rajan Kumar, Nidhi Goel. ‘ <i>Molecules, Supramolecules and Materials</i> ’ 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” <u>Kaushik Ghosh</u> , Sushil Kumar, Rajan Kumar <i>5th Asian Biological Inorganic Chemistry (AsBIC-Vth)</i> ’ in Kaohsiung, Taiwan during 1-5 November, 2010.
9.	Cobalt complexes derived from tridentate ligands: Generation of phenoxy radical and nuclease activity, Varun Mohan, Pramod Kumar, <u>Kaushik Ghosh</u> , U. P. Singh, “ <i>Diamond Jubilee Symposium on Recent Trends in Chemistry (DJSRTC)</i> ” 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, <u>Kaushik Ghosh</u> , Varun Mohan,

	Pramod Kumar, U. P. Singh, “3 rd 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, <u>Kaushik Ghosh</u> , “4 th 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, <u>Kaushik Ghosh</u> , Sushil Kumar, Rajan Kumar, Manju Bala “4 th Asian 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, ‘15 th CRSI National Symposium in Chemistry (NSC-15)’ <u>Kaushik Ghosh</u> , 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 detection of Hg(II) /Fe(II) and colorimetric sensor for Fe(II), Sweety Rathi, <u>Kaushik Ghosh</u> “Modern Trends in Inorganic Chemistry-XV” at IIT Roorkee. Dec. 2013 .
15.	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, <u>Kaushik Ghosh</u> , in Pondicherry University, Pondicherry, during 24-28 March, 2014 .
16.	Synthesis and characterization of nitrosyl complexes: Controlled delivery of nitric oxide (NO), ‘Indo-French Seminar on Bio-inorganic Approaches to Current Health Problems’, <u>Kaushik Ghosh</u> , Rajan Kumar, Sushil Kumar, Manju Bala, Anand Ratnam, in Pondicherry University, Pondicherry, during 24-28 March, 2014 .
17.	Carbon-hydrogen bond activation and synthesis of ruthenium(III) cyclometalates, ‘16 th CRSI National Symposium in Chemistry (NSC-16)’, Rajan Kumar, Sushil Kumar, <u>Kaushik Ghosh</u> in IIT Bombay, during 7-9 February, 2014 .
18.	Fe(II) complexes derived from meridional tridentate ligands containing N ₃ and N ₂ O donors Studies on catechol dioxygenase activity, Sweety Rathi, <u>Kaushik Ghosh</u> , “Indo- French Symposium ” at NISER Bhubaneshwar. Feb. 2014 .
19.	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, <u>Kaushik Ghosh</u> , “Modern Trends in Inorganic Chemistry-XVI at Jadavpur University. Dec. 2015 .

20.	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 <u>Kaushik Ghosh</u> , 18 th CRSI national symposium in chemistry, Punjab university Chandigarh. Feb 2016.
21.	Mononuclear copper complexes for structural functional mimicking of galactose oxidase: nuclease and protease activity studies Ovender Singh, U.P. Singh, <u>Kaushik Ghosh</u> , 18 th CRSI national symposium in chemistry, Punjab university Chandigarh. Feb 2016.
22.	Water soluble copper(II) complex having pendant phthalic anhydride moiety: Crystal structure, DNA interaction studies, nuclease activity, catecholase and phenoxazinone synthase activity studies <u>Ovender Singh</u> , Ankur Maji, <u>Kaushik Ghosh</u> , 5 th Symposium on advanced biological inorganic chemistry SABIC jan 2017.
23.	Selective catalytic oxidation chemistry via C-H activation and degradation of organic dyes by non-heme iron (II) complexes derived from tridentate ligands <u>Ovender Singh</u> , Anshu Singh, Udai P. Singh, <u>Kaushik Ghosh</u> 22 nd CRSI national symposium in chemistry, Indian Institute of Chemical Technology(IICT), Hyderabad, july 2017.
24.	A novel role of –Ome group in the ligand frame: Aromatic ring hydroxylation and synthesis of nickel and copper complexes <u>Kapil Kumar</u> , Sheela Kumari, A. K. Dhara, U. P. Singh, <u>Kaushik Ghosh</u> 22 nd CRSI national symposium in chemistry, Indian Institute of Chemical Technology(IICT), Hyderabad, july 2017.
25.	A new series of Ru ^{III} -Schiff base complexes 35ehavior for alcohol oxidation Anand Ratnam, U.P. Singh , <u>Kaushik Ghosh</u> “ <i>Modern Trends in Inorganic Chemistry-XVII</i> at NCL Pune. Dec. 2017.
26.	Design and direct synthesis of phenoxyl radical complex of zinc: Crystal structure and reactivity studies Kiran Mawai, <u>Kaushik Ghosh</u> “ <i>Modern Trends in Inorganic Chemistry-XVII</i> at NCL Pune. Dec. 2017.
27.	Unprecedented cleavage of amide bond and spontaneous generation of stable aminyl radical coordinated to ruthenium: Spectroscopic characterization, X-ray crystal structure, and theoretical calculations Manju Bala, <u>Kaushik Ghosh</u> , “ <i>Modern Trends in Inorganic Chemistry-XVII</i> at NCL Pune. Dec. 2017.
28.	Direct synthesis of heptacoordinated phenoxyl radical complex of copper derived from pentadentate ligands: Crystal structures and functional model of galactose oxidase enzyme Ovender Singh, Ankur Maji, Anshu Singh, Udai P. Singh, <u>Kaushik Ghosh</u> , “ <i>Modern Trends in Inorganic Chemistry-XVII</i> at NCL Pune. Dec. 2017.
29.	Selective sensing of Zn ²⁺ and pyrophosphate anion by rational designing and synthesis of a compartmental chemosensor probe: Dual sensing 35ehavior via secondary recognition aspects Kiran Mawai, <u>Kaushik Ghosh</u> 22 nd CRSI national symposium in chemistry,

	Pt. Ravishankar Shukla University, RAIPUR, Chhattisgarh. Feb.2018.
30.	Remarkable Effect of Position of Carboxamido Nitrogen in Bidentate Ligands to Synthesize Organometallic Ruthenium(III) Complexes Via C-H Activation: Organometallic Ruthenium Nitrosyl Complexes, Nitric Oxide Reactivity Studies and Application in Photodynamic Therapy Manju Bala, Kaushik Ghosh 22 nd CRSI national symposium in chemistry, Pt. Ravishankar Shukla University, RAIPUR, Chhattisgarh. Feb.2018.
31.	In-situ ligand modification to generate anion radical in organometallic ruthenium complex: Donation of nitric oxide (NO) from azo anion radical complex of ruthenium and application in photodynamic therapy Manju Bala, Kaushik Ghosh 28 th International Conference on Organometallic Chemistry (ICOMC-2018) Florence, Italy. July 2018.
32.	Reduction of substituted nitro-aromatics catalyzed by cobalt complexes and proposed reaction model Anshu Singh, Ankur Maji, Ovender Singh, Udai P. Singh and Kaushik Ghosh 24 th CRSI National Symposium in Chemistry Feb 8 -10, 2019 CSIR-Central Leather Research Institute & IIT Madras Chennai, Tamil Nadu
33.	Palladacycles derived from unsymmetrical pincer ligands: Mizoroki-Heck reactions and arylation of imidazoles Ankur Maji, Ovender Singh, Sain Singh, Udai P. Singh, Pradip K. Maji and Kaushik Ghosh 24 th CRSI National Symposium in Chemistry Feb 8 -10, 2019 CSIR-Central Leather Research Institute & IIT Madras Chennai, Tamil Nadu
34.	C-C and C-O bond formation catalyzed by Cu(I) complexes and possible reaction pathway Sheela Kumari, Kapil Kumar, U.P. Singh, Kaushik Ghosh 24 th CRSI National Symposium in Chemistry Feb 8 -10, 2019 CSIR-Central Leather Research Institute & IIT Madras Chennai, Tamil Nadu
35.	

INVITED TALK

S.No.	Title	Symposium	Place	Date
1.	Synthesis, structure and properties of mononuclear manganese complexes	<i>Modern Trends in Inorganic Chemistry-XII</i>	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	<i>3rd Asian Conference on Coordination Chemistry (ACCC3)</i>	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	<i>4th Asian Conference on Coordination Chemistry (ACCC4)</i>	Jeju, Korea	4-7 Nov, 2013
4.	Delivered popular lecture entitled " Chemistry : a natural science" in DST, Govt. of India sponsored programme	<i>Innovation in Science Pursuit for Inspired Research (INSPIRE)</i>	Shobhit University Meerut	20 June, 2013
5.	Mononuclear copper and dinuclear zinc complexes: Generation of phenoxyl radical complexes, alcohol oxidation and catecholase activity studies	<i>Indo-French Seminar on Bio-inorganic Approaches to Current Health Problems</i>	Pondicherry University	24-28 March, 2014
6.	Our Trevelogue to Inorganic Chemistry	<i>Guest Lecture</i>	LCC Toulouse, France	November, 2014
7.	Our Trevelogue to Inorganic Chemistry	<i>Guest Lecture</i>	University di Occidental Brest, France	January, 2015

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|------------|--|--|-----------------------------------|--|
| 8. | Popular lecture entitled Role of metal ions: From bio system to industry | <i>Guest Lecture</i> | IGFRI,
Grassland,
Jhansi | 9 th Aug 2015 |
| 9. | Chemistry with complexes capable of generating phenoxyl radical: Application of the lessons learned from galactose oxidase | <i>Modern Trends in Inorganic Chemistry-X
Modern Trends in Inorganic Chemistry-XVI</i> | Jadavpur
University
Kolkata | 3-5 th Dec
2015 |
| 10. | Nature's teaching through galactose oxidase enzyme: Structure and reactivity studies on phenolato and phenoxyl radical complexes | <i>Recent developments in chemistry</i> | NIT
Durgapur | 4-6 th October
2016 |
| 11. | Activation of oxygen by copper in galactose oxidase and tyrosinase: Studies on oxidation chemistry by model complexes | <i>National Conference on Frontiers in Chemical Sciences (FICS)-2016</i> | IIT
Guwahati | 08-10 th
December
2016 |