List of Publications

Papers published in SCI journals:

1. *Chelate* and *trans* effect of P,O donor phosphine ligands on rhodium catalyzed carbonylation of methanol.


   D. K. Dutta, **Biswajit Deb**, G. Hua, J. D. Woollins.

2. Rhodium(I) carbonyl complexes of tetradeutate chalcogen functionalized phosphines, \([P'(X)(CH_2CH_2P(X)Ph_2)_3]\) \(\{X = O, S, Se\}\): Synthesis, reactivity and catalytic carbonylation reaction.


3. Potential rhodium and ruthenium carbonyl complexes of phosphine-chalcogen (P-O/S/Se) donor ligands and catalytic applications.


   D. K. Dutta, **Biswajit Deb**.

4. Electron rich Vaska type complexes *trans*-\([Ir(CO)Cl(2-Ph_2PC_6H_4COOMe)_2]\) and *trans*-\([Ir(CO)Cl(2-Ph_2PC_6H_4OMe)_2]\): Synthesis, characterization and reactivity.


5. Influence of phosphorus and oxygen donor diphosphine ligands on the reactivity of rhodium(I) carbonyl complexes.


diphosphine ligands and their catalytic transfer hydrogenation.


7. Dicarbonyl iridium(I) complexes of pyridine ester ligands and their reactivity
towards various electrophiles.


8. Dicarbonylruthenium(II) complexes of diphosphine ligands and their catalytic
activity.


9. Synthesis, molecular and crystal structure of a new dicarbonylruthenium(II)
complex containing a xantphos dioxide chelating ligand.

_Polyhedron_, **2009**, 28, 2258–2262;

_Biswajit Deb_, D. K. Dutta.

10. Dicarbonylrhodium(I) complexes of chalcogen functionalized tripodal
phosphines, \([\text{CH}_3\text{C(CH}_2\text{P(X)Ph}_2)_3]\) \(\{X = \text{O, S, Se}\}\) and their reactivity.


Sarmah, M. G. Pathak, D. Konwar.

11. Rhodium carbonyl complexes containing pyridine carboxylic acid ligands:
Reactivity towards various electrophiles and catalytic activity.


12. Synthesis, characterization and thermal studies of ruthenium(II) carbonyl complexes of functionalized tripodal phosphine chalcogen donor Ligands [CH₃C(CH₂P(X)Ph₂)₃], where (X= Se, S, O).


**Patents filed:**

1. An improved process for the carbonylation of methanol by rhodium carbonyl complexes.  
   *Indian Patent Filed: No. 0102 DEL 2011, Dated 17-01-2011;*  
   **Inventors:** D. K. Dutta, B. J. Borah, **Biswajit Deb**.

2. Rhodium metal complexes and an improved process for the carbonylation of methanol.  
   *Indian Patent Filed: No. 0681 DEL 2010, Dated 26-04-2010*  
   **Inventors:** D. K. Dutta, **Biswajit Deb**, J. D. Woollins.

**Abstract of the papers published in Conference / Proceedings / Symposium / Seminar:**

1. Rhodium(I) carbonyl complexes of chalcogen functionalized phosphine donor ligands: Implication in catalytic carbonylation of methanol.  
   *3rd Asian Conference on Coordination Chemistry (ACCC-3), 17–20 October, 2011, Abs. No. PP 49;*  

2. Phosphine based ligand promoted iridium catalyzed carbonylation of methanol.  
   *National Seminar on Environmental Chemistry and Human Health, 12–14 February, 2011, Karimganj College, Karimganj, Page No. 9;*  

*National Seminar on Recent Advances in Synthesis and Catalysis, 10–12 February, 2011, Dibrugarh University, Dibrugarh, Abs. No. PP–5*


4. Activation of molecular oxygen by iridium(I) carbonyl complexes of phosphine donor ligands.

*International Conference on Emerging Areas of Chemistry, 12–14 January, 2011, Tripura University, Tripura, Abs. No. P–45*


6. Tetra-nuclear rhodium(I) carbonyl complexes of chalcogen functionalized phosphines, \([P(X)(CH_{2}CH_{2}P(X)Ph_{2})_{3}] \{X = O, S, Se\}\): Synthesis, reactivity and catalytic carbonylation reaction.

*Frontiers in Chemical Sciences, 3–4 Dec., 2010, IIT Guwahati, Abs. No. P 04;*


7. An electron rich Vaska type trans-[Ir(CO)Cl(2-PhPC_{6}H_{4}COOMe)_{2}] complex: Structural and electronic characteristics.

*MTIC-XIII, 7–10 December 2009, IISc Bangalore, Abs. No. P22;*


*National Seminar on Recent Advances in Chemical Sciences, 26–27 March, 2009 held at Dibrugarh University, Dibrugarh, Abs. No. OP 7;*


*11th CRSI, 6–8 February, 2009 held at NCL, Pune, Abs. No. 259;*

*Biswaajit Deb, P. P. Sarmah, D. K. Dutta.*


*Cat-19 National Symposium held at NCL, Pune during 18–21 January, 2009, Abs. No. PO–72;*


*96th Indian Science Congress, 3–7 January, 2009 held at NEHU, Shillong, Abs. No. 28;*

*Biswaajit Deb, B. J. Sarmah, B. J. Borah, D. Bora, P. P. Khound, O. P. Sahu, D. K. Dutta*