



DR DILIP KONWAR

A. Name : Dr. Dilip Konwar.

B. Designation : Scientist "F".

C. Institution : North East Institute of Science & Technology[NEIST]
A constituent establishment of CSIR
Jorhat, 785 006, Assam, India.
[Formerly Regional Research Laboratory ,Jorhat]

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D. Highest Academic Qualification : Msc. Ph.D[organic].

E. Research Experiences

i) Area of Research : a) Synthetic Organic Chemistry b) Organometallic Chemistry

c). Green chemistry

(ii) Research Guide : Recognized guide of Dibrugarh University, Dibrugarh & Guwahati University, Guwahati , Assam.

F. Award/Prize/Certificates :

1. Postdoctoral Fellowship for the years (1990-91) in the Department of Chemistry, Rensselaer Polytechnic Institute, Troy, New York, USA, to work with Prof. K.T. Potts[Emeritus]
2. Visiting Scientist under UK-INDIA (2002) joint research program at the university of St. Andrews, Scotland, UK, and worked with Prof. J.D.Woollins's chemistry group.
3. Awarded 10 appreciation certificates for R & D activities by the Director, NEIST- Jorhat, Assam, India
4. "Most cited paper award" for **Tetrahedron Letters**, volume 47, Issue 1, 2006, pages 79-82 for the years 2005 -2008 by Elsevier (P)Ltd, Oxford, UK

G. Total Publications[Papers, Presentations & Patents] : 80

H: R & D activities

A. Process Development Works [In-house]:

1. Captan[Fungicide]
2. Pentazocine [Analgesic]
3. Nitrazepam [CNS drug]
4. Suprofen [Anti-inflammatory][NSAID]
5. dl-Norgestrel[Oral contraceptive]
6. Dextromethorphan [Anti-tussive drug]
7. Development of clean processes for industrially important organic intermediates.
8. Industrially Important Organic Chemicals from Renewable Resources[On going].

B. CSIR Task Force Project

- a. Developing Green Technologies for Organic Chemicals: Bioactive molecules from medicinally important natural products
- b. Friedel-Crafts alkylation to produce Raspberry Ketone and Others using layered clay based solid acid catalyst.

I. Basic Research Projects

1. Synthesis of polycyclic heterocycles through 1,3-dipolar cycloaddition reaction of azomethine ylides
2. Asymmetric 1,3- dipolar cycloaddition reaction : A simple route to biologically important compounds.

Inter -Disciplinary Basic Research Works

1. Synthesis of novel Rh(1) and Ru(11) complexes of unsymmetrical chelating P-O, P-S and P-Se donor ligands and their reactivity towards small molecules ; Funded by DST, India ;Dr. D.k. Dutta [PI]& Dr.D. Konwar[co-PI].
2. Synthesis and characterization of Rh(1) complexes containing chiral and achiral P-O, P-S and P-Se donor ligands and their catalytic activity for the synthesis of industrially important compounds; **INDO-UK** Research Project ; Funded by DST, India.

Indian Part : Dr. D.k. Dutta[PI] & Dr.D. Konwar[Co-PI], NEIST, Jorhat, ,Assam

British Part : Prof. J.D. Woollins; University of St. Andrews, UK.

J.. Reviewer : Journal of Organic Chemistry ; Journal of the Indian Chemical Society; Journal of Molecular Catalyst A ; Green chemistry etc.

K. Ph.D produced : **2** ; **b.** Thesis submitted for Ph.D : **1**; **c.** JRFs for Ph.D : **1** .

L. A Few Selected Publications :

a. Synthetic Organic Chemistry :

1. Synthesis of 4/- vinyl- 2,2/, 6/,2// - terpyridine
D. Konwar & K.T. Potts ; **J. Org. Chem.** ; 1991, 56, 4815-4816.
2. AlCl₃.6H₂O/KI/CH₃CN/H₂O : An alternate system for dehydration of oximes and amides in hydrated media ; M. Boruah & D. Konwar ; **J.Org.Chem.**; 2002, 67, 7138-7139.
3. DMSO/N₂H₄.H₂O/I₂/H₂O/CH₃CN: A new system for selective oxidation of alcohols in hydrated media ; P.Gogoi, G. K. Sarmah & D.Konwar ; **J.Org. Chem.**; 2004, 69,5153-5154.
4. Surfactant/I₂/Water : An efficient system for deprotection of oximes and imines to carbonyls under neutral conditions in water; P. Gogoi, P. Hazarika & D. Konwar ; **J.Org. Chem.**; 2005, 70,1934-1936.
5. A novel reaction of Vilsmeier reagent with 2,1- benzisoxazoles; D.Konwar, R.C. Boruah & J.S. Sandhu ; **Tett.Letts.**, 28, 1987, 955-956.
6. A facile dehydration and Beckmann rearrangement of oximes with aluminium iodide D.Konwar, R.C.Boruah & J.S. Sandhu; **Tett. Letts.** ; 1990, 34,1063-1064.
7. A new reagent for the coupling of carbonyl compound to olefins;D. Konwar & D.K.Dutta ; **Tett. Letts** ; 2000 ,6227-6229.
8. AlCl₃6H₂O/KI/CH₃CN/H₂O- System : An efficient deoxygenation of organic N-oxides in hydrated media ; M.Boruah & D. Konwar ; **Syn. Lett.** ; 2001,795-796.
9. An efficient general deoxygenation of aryl nitrene ,azoxy benzene and aromatic N-oxides by aluminium iodide ; D.Konwar, R.C. Boruah & J.S. Sandhu; **Synthesis**, 1990, 337-340.

B . Organometallic Chemistry

10. Rh(1) containing complexes of triphenyl phosphine chelocogenide and their catalytic activity ; P.Das, D.Konwar & D.K.Dutta ;**Trans. Metal Chem.**; 2000,425-427
- 11.Synthesis and reactivity of dicarbonyl Rh(1) complex of hemilabile Ph₂CH₂COOC₂H₅ ligand ; P.Das, D.Konwar , M.Sarmah, N. Kumari & D.K.Dutta ; **Appd. Organomet. Chem.**, 16, 2002 , 302
12. Rhodium nitrene complexes. Efficient catalyst for carbonylation of methanol ;

P.Das, M. Boruah, N. Kumari, M. Sarmah, D. Konwar & D.K .Dutta ; **J. Molecular Catalyst A** ;178, 2002,283

13. Rhodium(1) carbonyl complexes of mono selenium functionalised bis-(diphenyl phosphino)methane and bis (diphenylphosphino)amine chelating ligands and their catalytic carbonylation activity ; D.K Dutta,.; J.D.Woollins,; M. Sarmah, A. M. Z. Salwin, , D Konwar,. P. Bhattacharya & S. M. Aucott, **J. Organomet.Chem.**; 2006 ,691(6),1229-1234
14. .An alternative strategy to an electron rich phosphine based carbonylation catalyst ; D.K. Dutta, J. D. Woollins, M.Z.Salawin, D.Konwar, P.Das, M.Sharma,P. Bhatta. & S. M. Aucott ;**Dalton Transaction (RS.C)** ; 2003 ; 2674-79.

C. Green Chemistry

15. Transition metal and organic solvent free: A highly efficient and anaerobic process for selective oxidation of alcohols to aldehydes and ketones in water ;P.Gogoi, & D. Konwar ; **Org.& Biomol. Chem**, 2005 ,3473-75
16. An efficient and one pot synthesis of imidazoles and benzimidazoles via anaerobic oxidation of carbon nitrogen bonds in water ; P.Gogoi & D. Konwar ;**Tett. Letters**, 2006,47,79-82
17. A highly efficient and green method for the synthesis of 3,4-dihydropyrimidin-2-ones and 1,5-benzodiazepines catalyzed by dodecyl sulfonic acid in water; S. Das. Sharma, P. Gogoi & D. Konwar ; **Green Chemistry**, 2007, 9, 153-157