***Bis*-N-heterocyclic Carbene based Gold(I) Catalysts: Synthesis and Catalytic Application in Hydrohydrazidation of Terminal Alkynes**

**Seema Yadav, Chandrakanta Dash\***

Department of Chemistry, School of Chemical Sciences & Pharmacy, Central University of Rajasthan, Bandarsindri, Rajasthan – 305817, India

E-mail: 2014phdch007@curaj.ac.in

Gold catalysis has been emerged as a powerful synthetic method in modern organic synthesis due to π-acidity property. Gold-based catalysis is used for the synthesis of varieties of heterocyclic systems, which find numerous applications in medicinal chemistry.1-2 Gold catalysts have been utilized in activation of unreactive alkynes toward nucleophilic addition reactions.3 Along these lines, we have prepared a series of new gold(I)-*N*-heterocyclic carbene complexes. The gold(I) complexes (**1-2**) were synthesized by the transmetallation route with addition of gold precursor [Au(SMe2)Cl] with silver-NHC complexes in dichloromethane at room temperature and are characterized by the NMR spectroscopy and X-ray crystallography. These new complexes supported by N-heterocyclic carbene shows good catalytic activity towards hydrohydrazidation of alkynes with various hydrazides. Here in, the synthesis and characterization of these new gold(I)-NHC complexes and their catalytic synthesis approach toward acylhydrazones through nucleophilic addition of hydrazides to alkynes will be presented.



**References:**

[1]. He, W.; Li, C.; Zhang, L. *J. Am. Chem. Soc*. **2011**, *133*, 8482.

[2]. Xiao, Y.; Zhang, L. *Org. Lett*. **2012**, *14*, 4662.

[3]. Hashmi, A. S. K. *Angew. Chem., Int. Ed.* **2010**, *49*, 5232.

Thrust area: - Organometallics and Homogenous catalysis

Research scholar of Department of Chemistry, Central University of Rajasthan