

# PhD Open Seminar

## Department of Chemistry, IISER Bhopal

Speaker: Biswajit Parhi (Thesis Advisor: Dr. Prasanta Ghorai)

Roll No: 1220202

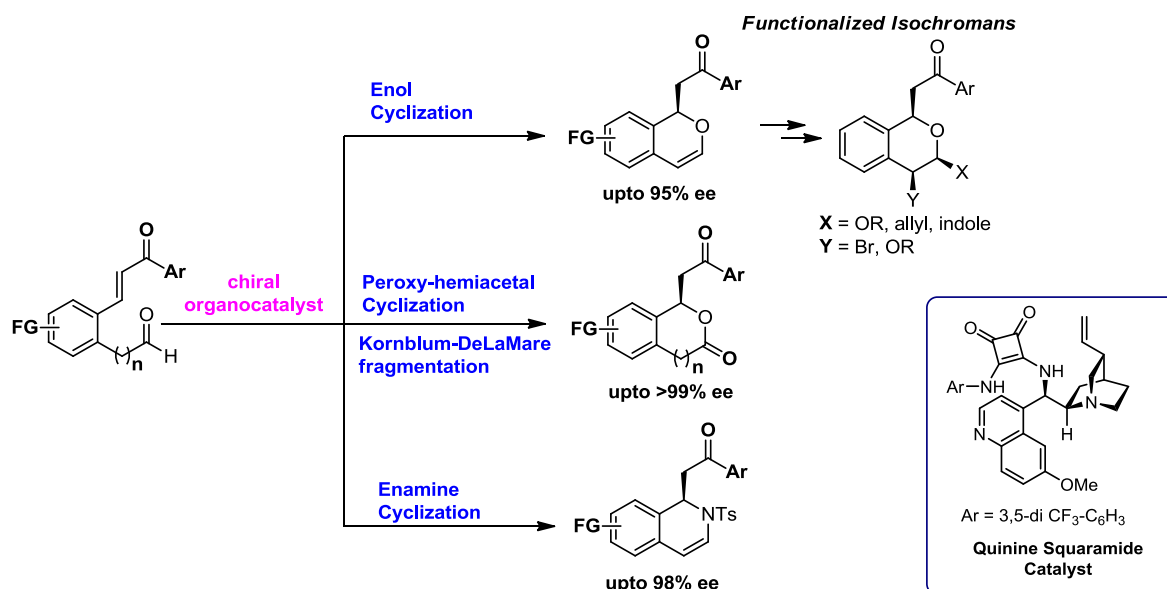
Topic: "Enantio-selective Synthesis of Isochromenes, Lactones & Dihydroisoquinolines using Quinine derived Squaramide Organocatalysts"

Date: 16<sup>th</sup> Oct 2017

Time: 5:00 PM

Venue: 401, AB-II

**Abstract:** Intramolecular oxa- and aza-Michael reactions play key role for the synthesis of enantiopure oxa- and aza-cycles, respectively. Recently, bifunctional asymmetric catalysis where the simultaneous co-ordination/complexation between catalysts with the reactants (electrophile & nucleophile both) is considered to be the most effective protocols for enantioselective processes.<sup>1</sup> In our first contribution towards asymmetric organocatalysis, we presented the very challenging controlled alcohol cyclization to offer enantioriched isobenzofuran moiety via a push-pull reaction pathway.<sup>2</sup> In this talk, I will discuss three other types of in-situ generated intermediates, namely, enol, masked carboxylic acid, and enamine cyclizations, which are more reactive than alcohol to offer enantio-pure isochromene, lactone and dihydroisoquinoline moieties, respectively.<sup>3,4,5</sup> Also, these methods are synthetically more challenging than alcohol because of their higher reactivity.



### References:

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4. Maity, S.; Parhi, B.; Ghorai, P. *Angew. Chem. Int. Ed.* **2016**, *55*, 7723; Parhi, B.; Maity, S.; Ghorai, P. *Org. Lett.* **2016**, *18*, 5220.
5. Roy, K. T.; Parhi, B.; Ghorai, P. *Manuscript communicated.*