

PhD Open Seminar

Department of Chemistry, IISER Bhopal

Speaker: **Sanjay Maity** (Thesis Advisor: Dr. Prasanta Ghorai)

Roll No. 1220218

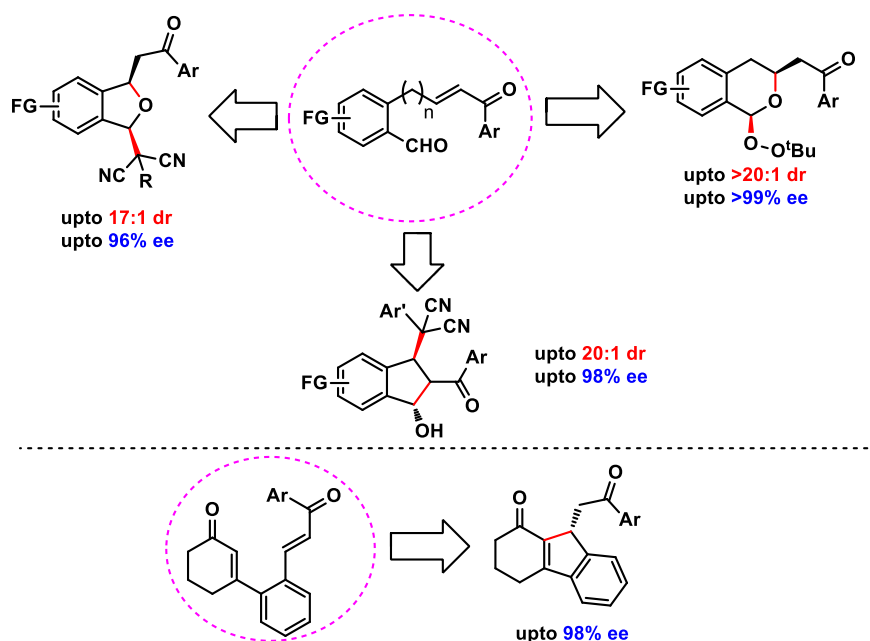
Title: Organocatalytic, Enantio- and Diastereo-selective Synthesis of Oxa- and Carbo-cycles.

Date: 15th Nov., 2017

Time: 4.00 PM

Venue: 401, AB-II

Abstract: The most fundamental way to construct oxa- and carbo-cycles in asymmetric pathway is the intramolecular oxa- and carba-Michael addition, respectively, by using chiral catalysts. Generally, covalent and non-covalent organocatalysis become the important tools in asymmetric synthesis to address diverse range of problems in a very efficient way.¹ Keeping this in mind, previously our group explored new activation mode for alcohol cyclization by using chiral bifunctional organocatalysts to afford isobenzofurans and isochromans with excellent enantioselectivity.² Now in this talk, I am going to discuss the activation mode for peroxy-hemiacetal cyclization,^{3a} chemoselective addition cascade of malononitriles^{3b} and α -addition of β,β -disubstituted α,β -enones via dienamine formation^{3c} using chiral bi-functional organocatalysts. The above strategies provided various enantioenriched oxa- and carbo-cycles.



1. (a) Taylor, M. S.; Jacobsen, E. N. *Angew. Chem., Int. Ed.* **2006**, *45*, 1520. (b) Lerner, R. A.; Barbas, C. F.; List, B. *J. Am. Chem. Soc.* **2000**, *122*, 2395.
2. (a) Ravindra, B.; Das, B. G.; Ghorai, P. *Org. Lett.* **2014**, *16*, 5580. (b) Ravindra, B.; **Maity, S.**; Das, B. G.; Ghorai, P. *J. Org. Chem.* **2015**, *80*, 7008.
3. (a) **Maity, S.**; Parhi, B.; Ghorai, P. *Angew. Chem., Int. Ed.* **2016**, *55*, 7723. (b) **Maity, S.**; Saha, M.; Hazra, G.; Ghorai, P. *Org. Lett.* **2017**, DOI:10.1021/acs.orglett.7b02862. (c) **Maity, S.**; Sar, S.; Ghorai, P. *manuscript under preparation*.