

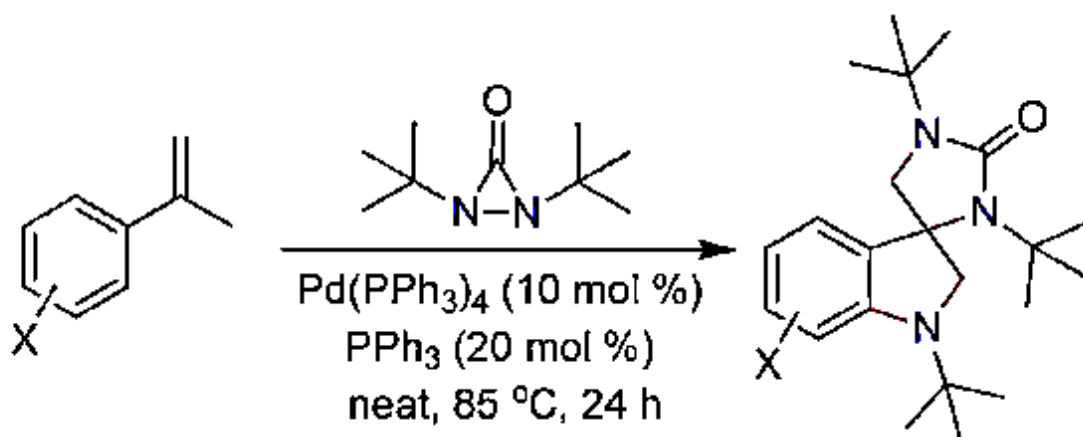
## Joint group meeting problems

September 19<sup>th</sup> 2013

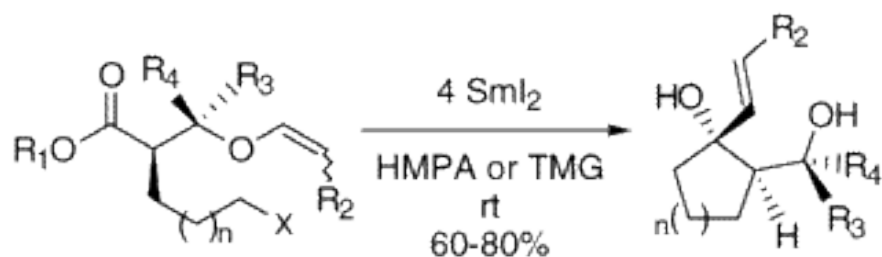
By Pouyan Haghshenas

**A: Please propose a plausible catalytic cycle for the following transformation:**

(The nature of X group does not significantly influence the reaction outcome)



**B: Please propose a plausible mechanism for the following transformation:**



$R_1 = \text{Me}, R_2 = \text{H}, R_3 = \text{Me/H}$   
 $R_4 = \text{H/Me}, n = 1, X = \text{Cl}$