Main Conclusion

- We have successfully synthesized and characterized Pd nanocatalysts stabilized by parent (TPA) and vacant tungstophosphoric acid (LTPA) by two different routs
- Catalytic activity of all the catalysts were evaluated towards C-C cross coupling (SM and Heck) as well as hydrogenation
- The main disadvantage of heterogeneous catalysis, "leaching of active species from the support" has been resolved for all catalytic systems
- For all reactions, exchanged method for the designing of the catalysts was found to be better. For C-C cross coupling Pd-TPA/ZrO_2 whereas for hydrogenation Pd-LTPA/ZrO_2 was found to be better
- Finally, our study agrees with our assumption that NPs and NCLs depicts almost similar catalytic activity for organic transformations (Please refer, General introduction, Page No. 11)