

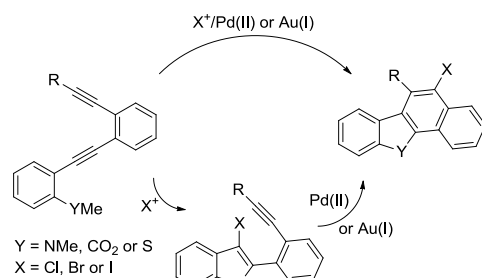
## CBC SEMINAR ANNOUNCEMENT



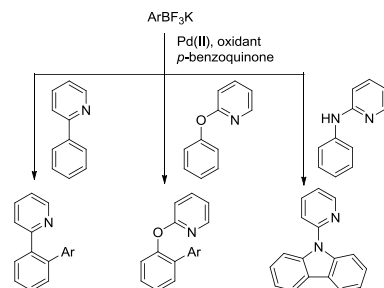
**Professor Wu Ming-Jung**  
**National Sun Yat-sen University**

### Transition-Metal Catalyzed Cyclization and C-H Functionalization Reactions

Treatment of *N,N*-dimethyl 2-[(2-(2-alkynylphenyl)ethynyl)anilines with ten mol% of PdCl<sub>2</sub> and two equivalents of CuCl<sub>2</sub> at refluxing THF for one hour gave the chlorinated benzo[*a*]carbazoles in excellent yields. A chloroindoles was proposed as the key intermediate and prepared separately by reaction of *N,N*-dimethyl 2-[(2-(2-alkynylphenyl)-ethynyl) anilines with two equivalents of CuCl<sub>2</sub> at refluxing THF. Treatment of this chloroindole with various electrophilic transition metals, such as PdCl<sub>2</sub>, Pd(OAc)<sub>2</sub>, PtCl<sub>2</sub> and Ph<sub>3</sub>AuCl, gave benzo[*a*]carbazoles in good yields. This synthetic method has been extended to the synthesis of dibenzo[*b,d*]pyran-6-ones and dibenzothiophenes.



In the development of new synthetic method through C-H activation, potassium aryltrifluoroborates are superior to aryl boronic acids in the *ortho*-arylation of 2-phenylpyridines, 2-phenoxy pyridines and *N*-phenylpyridin-2-amines. *p*-Benzoquinone is found to play as an important ligand for transmetalation reductive elimination step in the catalytic process.



**Date:** 10<sup>th</sup> January 2012 (Tuesday)  
**Time:** 10:45am – 12:15pm  
**Venue:** NTU SPMS CBC Building Level 2,  
Conference Room  
**Host:** Professor Loh Teck Peng