DIVERSITY-ORIENTED SYNTHESIS OF DIARYL SUBSTITUTED HERTEROCYCLES *VIA* SEQUENTIAL PALLADIUM CATALYSIS

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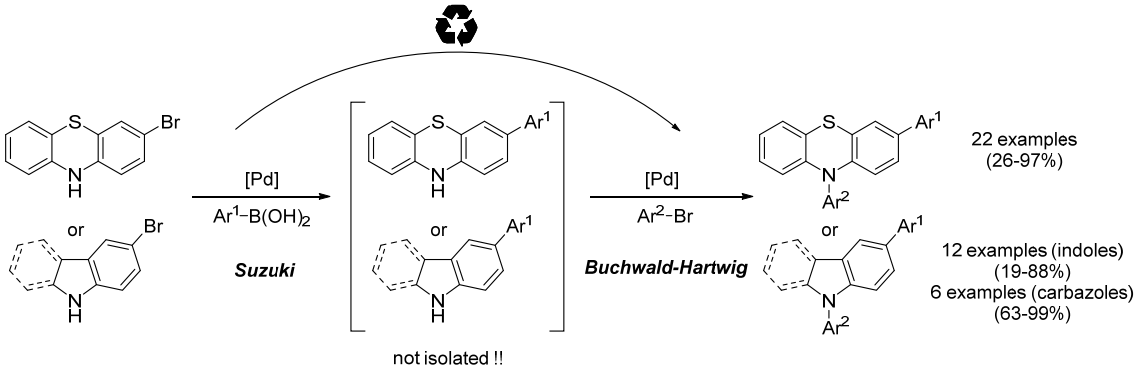
Heterocycles are ubiquitous in all aspects of modern chemistry, such as medical chemistry[1] and material sciences.[2] Their facile preparation is one of the most challenging goals for synthetic chemistry. Sequentially Pd-catalyzed processes based on cross-coupling reactions are excellent entries to heterocycle synthesis.[3] Here, we report a sequentially Pd-catalyzed synthesis of diaryl substituted heterocycles employing *Suzuki* and *Buchwald-Hartwig* coupling in a one-pot fashion.



3,10-Diaryl phenothiazines are intensively blue to yellow fluorescent with large *Stokes* shifts for all systems. Cyclic voltammetry displays a distinct *Nernstian*-reversible redox behavior for the first one-electron oxidations. Their potential strongly depends on the electronic substitution pattern of the benzo ring. In a consanguineous series of *para*-substituted 3,10-diaryl phenothiazines a three-dimensional LFER can be established for first oxidation potentials and corresponding *Hammett* substituent parameters.

[1] H. Xu, W.-Q. Liu, L.-L. Fan, Y. Chen, L.-M. Yang, L. Lv, Y.-T. Zheng, *Chem. Pharm. Bull.* **2008**, *56*, 720-722.

[2] Z.-S. Huang, H. Meier, D. Cao, *J. Mater. Chem. C*. **2016**, *4*, 2404-2426.

[3] T. Lessing, T. J. J. Müller, *Appl. Sci.* **2015**, *5*, 1803-1836.