

NEW SYNTHESIS OF POLYHETEROARENES VIA PALLADIUM-PHOSPHINE
COMPLEX CATALYZED CROSS-COUPLING

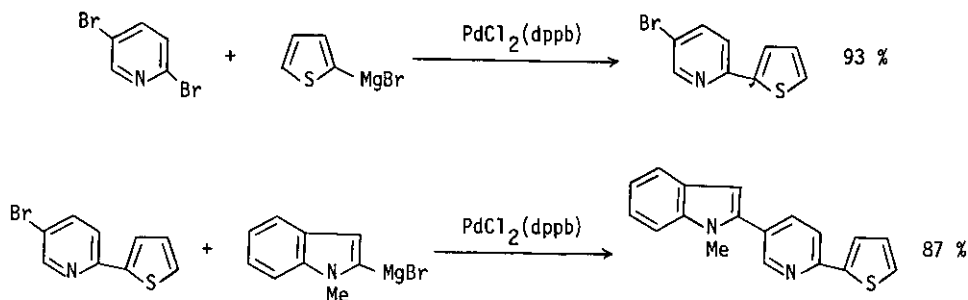
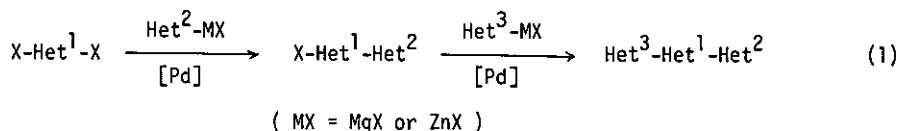
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After the pioneering work by Kauffmann,¹⁾ the further development of the chemistry of polyheteroarenes is rather limited because of the lack of the general synthetic method. We describe herein a new, efficient synthetic method of heteroarene trimers composed of three different heteroarenes via stepwise hetarylation of dihaloheteroarenes. The present development is based on our recent, two results on the palladium-phosphine complex catalyzed cross-coupling reactions: (1) The selective mono-alkylation or -arylation of dihaloaromatics,²⁾ and (2) the coupling of hetaryl halides with hetarylmetallic reagents.³⁾ (eq. 1). A typical example is illustrated below.



1) T. Kauffmann, *Angew. Chem., Int. Ed. Engl.*, **18**, 1 (1979).

2) A. Minato, K. Tamao, T. Hayashi, K. Suzuki, and M. Kumada, *Tetrahedron Lett.*, 845 (1980).

3) A. Minato, K. Tamao, T. Hayashi, K. Suzuki, and M. Kumada, *Tetrahedron Lett.*, 5319 (1981).