

## CBC SEMINAR ANNOUNCEMENT

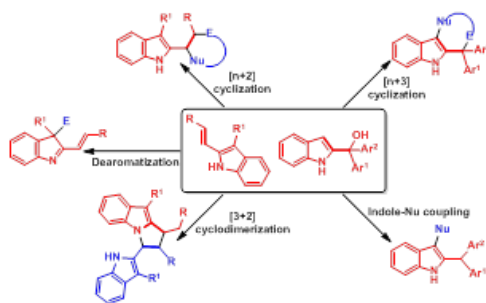


**Professor Feng Shi**  
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### Application of Vinylindoles and Indolylmethanols in Synthesizing Indole Derivatives

Catalytic asymmetric synthesis of enantioenriched indole derivatives has aroused great concern in the community of chemistry because chiral indole frameworks constitute the core structures of many important natural products and pharmaceuticals.<sup>1</sup> Among different approaches, catalytic asymmetric reactions using vinylindoles and indolylmethanols as reactants have recently emerged as powerful methods for synthesizing optically pure indole derivatives.<sup>2</sup> However, new class of vinylindoles and indolylmethanols-involved catalytic asymmetric reactions are rather limited, which remains to be a great challenge in organic synthesis.

To settle this challenge, our group has designed new class of vinylindoles and indolylmethanols as competent reactants for catalytic asymmetric reactions, which synthesized a variety of enantioenriched indole derivatives.<sup>3-4</sup> For instance, we have designed 3-alkyl-2-vinylindoles and established [n+2] cyclization, dearomatization and [3+2] cyclodimerization reactions of this class of substrates.<sup>3</sup> In addition, we have designed 2-indolylmethanols as 3C building blocks in enantioselective and regioselective [n+3] cycloadditions.<sup>4</sup> We also found the interesting “umpolung” property of the C3-position of 2-indolylmethanols, which facilitated a series of indole-nucleophile couplings.<sup>4</sup> In this lecture, I will give more details on the recent advances of our group in this research filed.



#### References

- For some recent reviews: (a) Kochanowska-Karamyan, A. J.; Hamann, M. T. *Chem. Rev.* 2010, 110, 4489; (b) Taber, D. F.; Tirunahari, P. K. *Tetrahedron* 2011, 67, 7195.
- For some recent reviews: (a) Chen, Y.; Wang, L.; Xiao, J. *Asian J. Org. Chem.* 2014, 3, 1036; (b) Wu, H.; He, Y.-P.; Shi, F. *Synthesis*, 2015, 47, 1990.
- For a recent review: (a) Mei, G.-J.; Shi, F. *Synlett*, 2016, 27, 2515; For some examples: (b) Tan, W.; Li, X.; Gong, Y.-X.; Ge M.-D.; Shi, F. *Chem. Commun.* 2014, 50, 15901; (c) Zhao, J.-J.; Sun, S.-B.; He, S.-H.; Wu, Q.; Shi, F. *Angew. Chem. Int. Ed.* 2015, 54, 5460.
- For a recent review: Mei, G.-J.; Shi, F. *J. Org. Chem.* 2017, 82, 7695; (a) For some examples: (b) Sun, X.-X.; Zhang, H.-H.; Li, G.-H.; He, Y.-Y.; Shi, F. *Chem. Eur. J.* 2016, 22, 17526; (c) Zhu, Z.-Q.; Shen, Y.; Sun, X.-X.; Tao, J.-Y.; Liu, J.-X.; Shi, F. *Adv. Synth. Catal.* 2016, 358, 3797; (d) Zhang, H.-H.; Wang, C.-S.; Li, C.; Mei, G.-J.; Li, Y.; Shi, F. *Angew. Chem. Int. Ed.* 2017, 56, 116.

**Date:** 15th September 2017 (Friday)  
**Time:** 2:30pm – 4:00pm  
**Venue:** SPMS MAS Executive Classroom 1  
**Host:** Professor Robin Chi