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ORAL/POSTER PRESENTATION

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Title 2- and 3-Vinylindoles as 4π components in cycloaddition reactions
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2- AND 3-VINYLINDOLES AS 4Π COMPONENTS IN CYCLOADDITION REACTIONS

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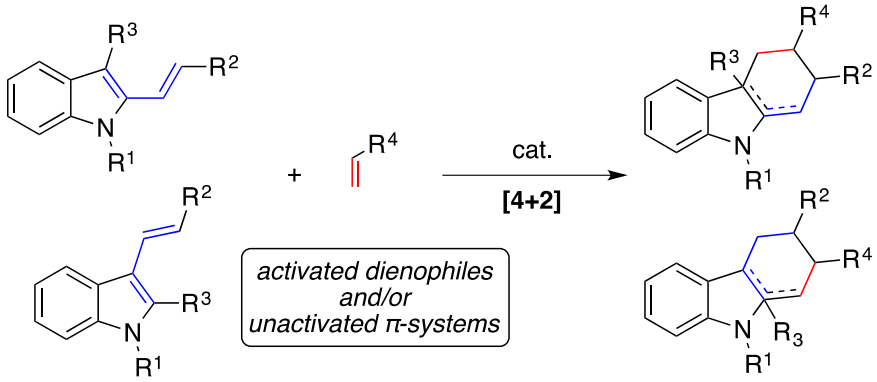
[4+2] cycloaddition reactions are among the most useful transformations in synthetic organic chemistry. They are a widely used method for the assembly of simple and complex six membered carbo- and heterocyclic compounds. The reaction is modulated by the substituents on both the diene and the dienophile partners and by the design of different catalytic species. In particular, among dienes, internal-external ring dienes represent a class of very useful and versatile molecules and their participation as 4π-components in cycloaddition reactions allows for the construction of complex polycyclic compounds. Taking a peak to the structure of 2- and 3-vinylindoles, it is easy to claim that they pertain to this class of molecules and, during the last ten years we developed several strategies to access carbazole derivatives through [4+2] cycloaddition reactions of vinylindoles with a plethora of unsaturated compounds. In particular, starting from Lewis acids catalyzed reactions with cyclic and acyclic dienophiles,[1] we explored the possibility of using cationic gold(I) species to promote the reaction of vinylindoles with unactivated π-systems as dienophiles. (e.g. *N*-allenamides, propargylic esters). In this way we were able to construct complex and intriguing architectures in a stereocontrolled fashion.[2] In addition, considering the importance of asymmetric syntheses of carbazole derivatives, we investigated the reactivity of 3/2-substituted-2/3-vinylindoles with *N*-allenamides under chiral gold(I) catalysis for the synthesis of a new series of dearomatized indoles bearing a quaternary C4a/C9a stereocenter.[3] The results obtained in our last studies on [4+2] cycloaddition reaction with vinylindoles will be discussed with particular focus on the choice of catalysts and on the reaction mechanisms.



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