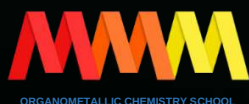


BOOK OF ABSTRACTS

XV International School on Organometallic Chemistry “Marcial Moreno Mañas”



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Ru(II)-catalyzed [2+2+2] cycloaddition of alkynes and nitriles to pyridines in water or mixtures water/polar solvents

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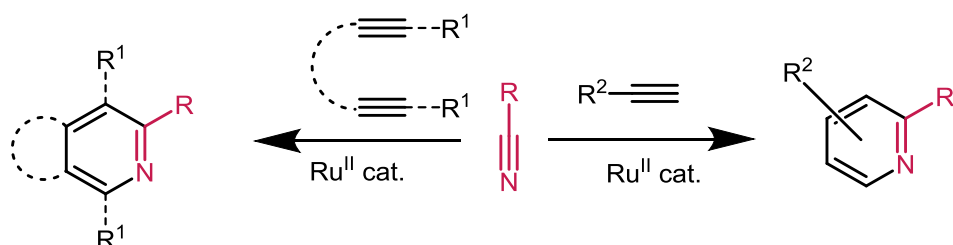
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Azaheterocycles are among the most prominent structures of drugs. Specifically, the six-membered aromatic pyridines are present in the most usual nitrogen heterocycles in pharmaceuticals.¹ Regarding sustainable synthetic methods to access to pyridines, metal-catalyzed [2+2+2] cycloadditions [2+2+2] between two alkynes and one nitrile has received a great deal of attention as a reliable methodology with an excellent tolerance of functional groups.² A unique but interesting water-soluble cobalt(I) catalyst has been used in the aqueous, chemospecific, cyclotrimerization of propargyl alcohols and nitriles to highly functionalized pyridines.³ We herein report intermolecular and partially intramolecular Cp/Cp*Ru(II)-catalyzed [2+2+2] cycloadditions between terminal/substituted alkynes and nitriles in aqueous conditions or mixtures water/polar solvents (Scheme 1).⁴



Scheme 1. Pyridines by inter- and partially intramolecular Ru(II)-catalyzed cycloaddition between alkynes and nitriles in water or water/polar solvents.

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