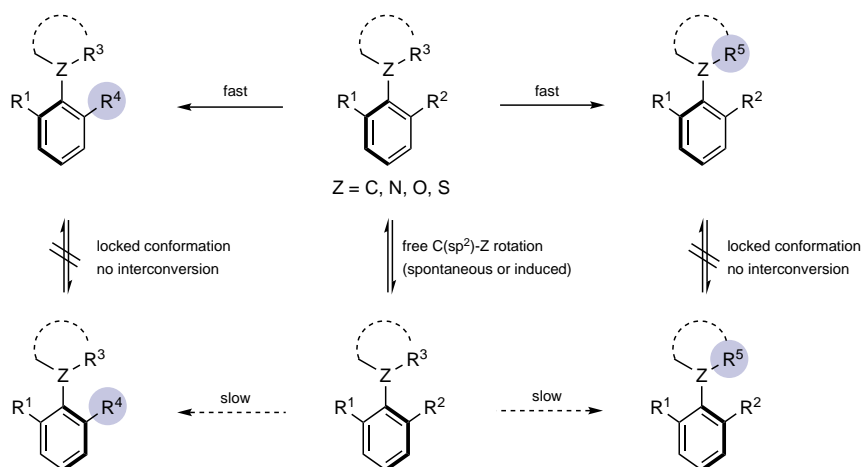


12 Dynamic Kinetic Resolution and Dynamic Kinetic Asymmetric Transformation of Atropisomers

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Stereoenriched atropisomeric compounds find important applications in various areas of chemistry and their synthesis is therefore a critical research target. This chapter presents a selection of the best methods available to date for the asymmetric preparation of atropisomeric compounds using dynamic stereoselective techniques. For the more common (hetero)biaryls, the selected reactions are classified according to the conformational stability of the substrates, i.e. whether they are freely rotating or are configurationally stable and require a chemically induced, temporary lowering of their rotation barrier before an asymmetric transformation can lock the axial chirality again. Strategies towards the stereoselective synthesis of non-biaryl atropisomers using dynamic resolution techniques are also covered.



Keywords: asymmetric synthesis · asymmetric catalysis · enantioselectivity · diastereoselectivity · conformation · atropisomers · dynamic kinetic resolution · dynamic kinetic asymmetric transformation · DKR · DYKAT · dynamic thermodynamic resolution · chiral auxiliaries · palladium · organocatalysis · biaryls · nitrogen heterocycles · amides