

Abstract

Flexibility endows the calixarenes with a dimension that at times can be frustrating but that also makes possible the fashioning of cavities of highly varied shapes and contours, and forming complexes with specific guests.

Modifying the mono- and di-substituted allyl groups on the lower rim of calix[4]arenes by 1,3-dipolar cycloaddition reaction may lead to chiral and fluorescent isoxazoline calix[4]arenes, which are not only useful for sensor of metal ion but also good for chiral recognition. Besides, ring-opening reactions of the isoxazoline calix[4]arenes can produce several multi-functional compounds which are also useful in molecular recognition studies.

When the lower rim of calix[4]arenes are modified with mono- and di-substituted propargyl groups, they can undergo 1,3-dipolar cycloaddition reaction and give fluorescent isoxazole substituted calix[4]arenes, which may be also useful for metal ion sensing.