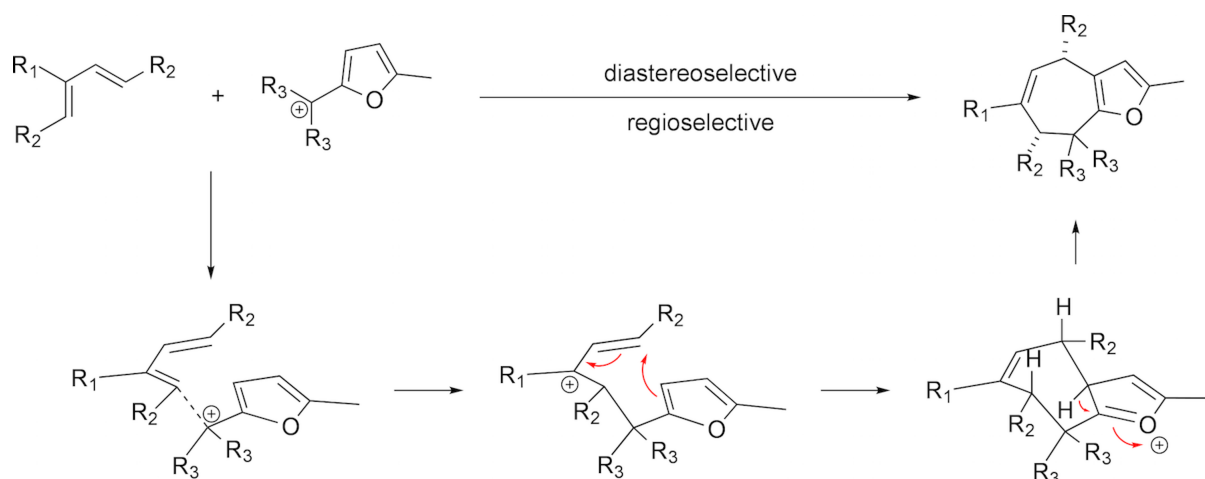


STEREOSELECTIVITY IN FURFURYL CATION (4+3) CYCLOADDITIONS

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In this presentation we report the remarkable stereoselectivity observed in various (4+3)-cycloadditions between 1,3-dienes and furfuryl cations.^[1] Our group already observed a high degree of stereoselectivity in this type of reactions, especially intramolecular ones,^[2-4] but we now show that also intermolecular reactions can proceed with high degrees of regioselectivity and diastereoselectivity. Moreover, DFT calculations have confirmed a simple transition state model that allows a prediction of the stereochemical outcome of these cycloadditions. Interestingly, these stepwise cationic cycloadditions proceed through transition states that have a degree of preorganization similar to those found in pericyclic cycloadditions.

References

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