הפקולטה לכימיה ע"ש שוליך
טכניון – מכון טכנולוגי לישראל
Faculty of Chemistry SCHULICH
Technion, Israel Institute of Technology

The Laboratory for Organic and Inorganic Chemistry

Final PhD Seminar

Monday, March 11th at 11:30 in Hall 1

Mr. Rahul Suresh

Marek Group

On the Topic of:

Stereoselective Synthesis Using Three Membered Rings.

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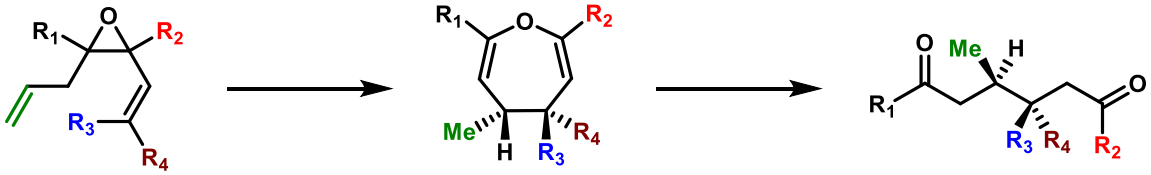
Stereoselective Synthesis Using Three Membered Rings.

Abstract: This seminar is divided into two parts, in the first I will be talking about alkene isomerization Cope rearrangement cascades. The Cope rearrangement of 2,3-divinyloxiranes, a rare example of epoxide C–C bond cleavage, results in 4,5-dihydrooxepines which are amenable to hydrolysis, furnishing 1,6-dicarbonyl compounds containing two contiguous stereocenters at the 3- and 4-positions. We employ an iridium-based alkene isomerization catalyst to form the reactive 2,3-divinyloxirane in situ with complete regio- and stereocontrol, which translates into excellent control over the stereochemistry of the resulting oxepines and ultimately to an attractive strategy towards 1,6-dicarbonyl compounds.



In the second part, I will describe the diastereoselective synthesis of polysubstituted bicyclobutanes possessing up to three stereodefined quaternary centers and five substituents. Our strategy involves a diastereoselective carbometalation of cyclopropenes followed by a cyclization to furnish the bicyclobutane ring system. This straightforward approach allows the incorporation of a diverse range of substituents and functional groups, notably without the need for electron–withdrawing functionalities.