Public Abstract

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Title:1,5-HYDRIDE SHIFT OF ALKENYL SULFOXIMINE/ [4+3] CYCLOADDITION AND RING OPENING/
NOVEL HYDRAZINE SYNTHESIS FROM TROGERS BASE ANALOGUES

Three synthetic methodologies are studied in details in this dissertation.

For 1,5-hydride shift of alkenyl sulfoximine methodology, an uncommon 6-endo-trig 1,5-hydride shift process was discovered. N-H-S-alkyl sulfoximines, four- and six-membered heterocyclic rings and a new class of chiral dienes were obtained.

In [4+3] cycloaddition and ring opening methodology, we demonstrated enantio pure α -substituted cyclopentenones are potentially accessible, and furyl ketones could be made by acid-catalyzed ring-opening from [4+3] adduct.

In hydrazine synthesis methodology, we showed some interesting tetracyclic hydrazine compounds can be synthesized from Troger's base analogues.

The studies in the dissertation not only provide new ideas such as "intramolecular redox of alkenyl sulfoximines", but also provide new strategies to the synthesis of molecules such as tetracyclic hydrazines. The compounds we made are potentially useful for new drug synthesis. The work we done would help improving people's life for the whole world.