Synthesis and Polymerization of \((E,E)-[6.2]-(2,5)\)furanophane-1,5-diene

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The goal of this research is to polymerize (E,E)-[6.2]:2,5-furanophane to give a linear polymer. It will be synthesized by a 1,8-Hofmann Elimination using trimethyl-[(E)-3-(5-methyl-2-furyl)allyl] ammonium iodide.

This diene will then be polymerized. The resulting polymeric [3.2] furanophane will then be oxidized to form a polymeric macrocycle tetra ketone. This compound will be tested for cation complexation.

Introduction

- Cyclophanes are macrocycles that contain aromatic rings within the greater ring structure. The pendant for cyclo polymerization was demonstrated previously with [6.2]-paracyclophane-1,5-diene.
- Our research uses furan in place of the benzene ring in the macrocycle. These are termed “furanophanes”.
- We are trying to polymerize the furanophane. The intermediate diene, [6.2] furanophane diene has already been reported.
- Through oxidation of the furan ring, we will attempt to create an organometallic complex; fixing and binding a metal in the center of the macrocycle.

Abstract

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References

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