

Abstract

Helicenes are inherently chiral polycyclic aromatic molecules. Laterally extended helicenes have their outer rim extended by one or more aromatic rings, which gives them unique optical and electron properties and makes them hot candidates for applications in asymmetric catalysis or molecular electronics, for instance.

However, the larger the outer rim is, the more difficult the synthesis of wide helicenes becomes. Frequently bad solubility of laterally extended helicenes, as well as their intermediates, requires comprehensive optimisation of the reaction conditions, which are commonly used in helicene synthesis.

In my Bachelor Thesis, I focus on synthesis of a laterally extended helicene with two hexabenzocoronene moieties incorporated in its structure. One of the essential intermediates, bromiodohexaphenylbenzene derivative, was prepared by Diels-Alder reaction. Optimised conditions of this reaction enabled the synthesis of crucial intermediates necessary for further steps in the target helicene synthesis.

Key words: *helicene, hexabenzocoronene, hexaphenylbenzene, Diels-Alder, polyaromatics*