Organocatalysis in Fullerene Chemistry

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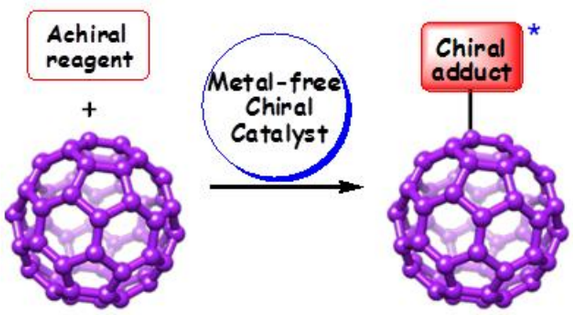
The availability of a wide number of asymmetric methods in fullerene chemistry is a prerequisite (or an important requirement) towards the construction and applications of chiral all-carbon nanostructures. A major breakthrough to this respect has been the introduction of the chiral metal catalysis for the stereoselective synthesis of optically active C_{60}, C_{70} and metallofullerene derivatives.[1]

On the other hand, organocatalysis has emerged during the last decade as a straightforward strategy for a metal-free chirality induction in organic synthesis.[2]

In this communication the first asymmetric synthesis of chiral fullerene derivatives based on organic chiral catalysts will be discussed. These results represent a significant step forward in the synthesis of chiral fullerenes, and pave the way for a new all-carbon chemistry to produce a wide variety of carbon nanostructures based on organocatalysis.



References:
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