

Helically Chiral Aromatics: Their Synthesis, Properties and Applications

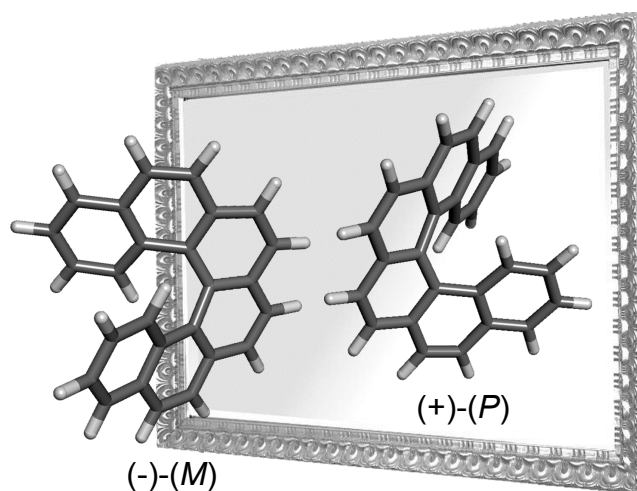
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The preparation of nontrivial helically chiral aromatics and exploration of their physico-chemical properties attracts a considerable attention these days. Hand in hand with the development in their synthesis, an increasing number of applications to chemistry, physics and biology has been described in the literature [1]. Relying on a robust [2+2+2] alkyne cycloisomerisation, we have demonstrated the successful synthesis of a wide range of helically chiral (hetero)helicenes encompassing functionalised, laterally/axially extended and enantiopure derivatives [2].

We will present the synthesis of a series of (hetero)helicenes and (hetero)helicene-like compounds equipped with various functional groups being prepared in a racemic or enantiopure form. We will focus also on their unique chemical/physical properties and applications to catalysis, physics or nanoscience. In particular, the single-molecule conductivity [3], piezoelectric behaviour [4], spectroscopic properties, on-surface chirality transformation [5] and use in asymmetric catalysis will be discussed.



References

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