Microcycles: easily accessible phenanthrocyclophanes

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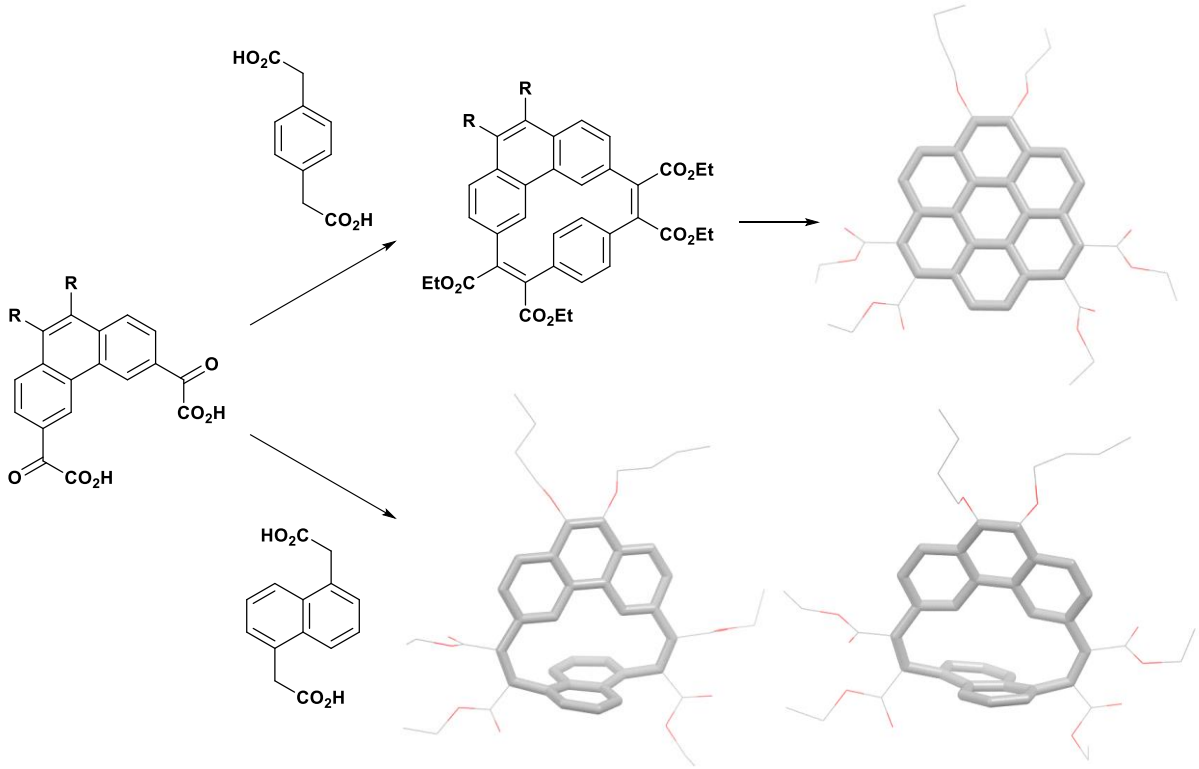
The synthesis of conjugated macrocycles from polycyclic aromatic fragments has been a subject of extensive research the last decades because of their unusual structures and physical properties.[1] Our team developed a synthetic pathway for the formation of new carboxy-substituted polycyclic aromatic compounds based on a modified version of the historic Perkin reaction.[2] This strategy allows the formation of large variety of conjugated molecules, linear or branched, flat or twisted, and has even been proved to be highly efficient for the formation of macrocyclic compounds.[3] Using bifunctionnalized phenanthrene building blocks and commercially available phenylene diacetic acid, macrocycles resulting of [1+1] macrocyclization reactions were isolated. The tense macrocycles obtained proved to be ideal precursors for functionnalized coronenes. When using a naphthalene instead of a phenylene, racemic mixtures of enantiostable macrocycles are obtained. The enantiomers were separated by chiral HPLC and their photophysical and chiroptical properties were studied.



References

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