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The Thiophene–Based
Inherently Chiral Monomer Family Grows:
Molecular Design and
Electrochemical Properties

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Our group has recently presented electroactive thiophene-
based polyconjugated films of unprecedented chirality
manifestations and enantiorecognition ability,[1] based on
the "inherent chirality" concept, implying that the whole
electroactive backbone coincides with the stereogenic
element, consisting in a tailored torsion induced by an
atropisomeric bi-benzothiophene scaffold. Such films are
easily prepared as enantiopure electrode surfaces by
electrooligomerization of (R) and (S) enantiopure
monomer 1.

Now, concurrently with the exploration of the applicative
potentialities of this "parent" molecular material, both
racemic and enantiopure, we are widening the class of
available monomers designed according the same strategy, but with different
atropisomeric heteroaromatic scaffolds, different side chains, and/or with the addition
of a further stereogenic element. The electrochemical properties of a selection of the
new inherently chiral monomers now available will be presented in detail and
rationalized as a function of their molecular structure, also in the perspective of
potential applications.

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