65th Annual Meeting

of the International Society of Electrochemistry

31 August - 5 September, 2014
Lausanne, Switzerland

Ubiquitous Electrochemistry

PROGRAM

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

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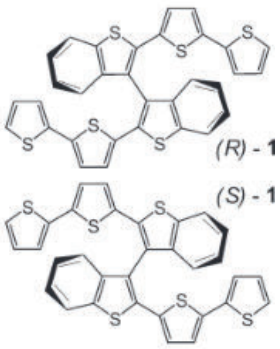
Our group has recently presented electroactive thiophene-based polyconjugated films of unprecedented chirality manifestations and enantiorecognition ability,[1] based on the "inherent chirality" concept, implying that the whole electroactive backbone coincides with the stereogenic element, consisting 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.

With the contribution of Fondazione Cariplo, grant no. 2011-0417.

[1] F. Sannicolò, S. Arnaboldi, T. Benincori, V. Bonometti, R. Cirilli, L. Dunsch, W. Kutner, G. Longhi, P.R. Mussini, M. Panigati, M. Pierini, S. Rizzo, *Angew. Chemie* **2014**, *53*, 2623-2627.