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Inherently Chiral Spider-Like Oligothiophenes

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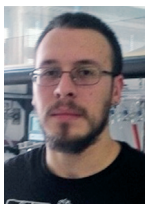

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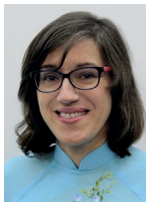

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Invited for the cover of this issue are the groups of F. Sannicolò, P. R. Mussini and R. Martinazzo (University of Milan, Italy), T. Benincori (University of Insubria, Italy), and W. Kutner (Polish Academy of Sciences, Warsaw, Poland). The image depicts the spider (*S*)-T8$_3$ in a highly selective chiral web, in which enantiomorphic insects (L- and D-DOPA, *R*- and *S*-FcA) are differently entrapped. Read the full text of the article at 10.1002/chem.201504899.

What is the most significant result of this study?

The results of this research provided further evidence of the efficiency of the "inherent chirality design", which implies that the same molecular moieties constituting the stereogenic elements responsible for chirality also provide the material with its specific properties. The oligothiophene material resulting from electrooxidation of the new inherently chiral "spider-like" octathiophene monomer **T8$_3$** displayed high enantiorecognition ability towards the antipodes of some chiral probes. Moreover, the racemic monomer efficiently cross-linked a molecularly imprinted polymer (MIP) devised for the recognition of a thymine–adenine oligonucleotide.

How did the collaboration on this project start?

Our collaboration has arisen because of complementary research interests of all our partner groups. That is, the Italian group is designing, synthesizing, and characterizing thiophene-based (recently chiral) monomers and polymers and the Warsaw group is focused on molecular imprinting, which requires the use of a cross-linking co-monomer with high 3D polymerization efficiency. The octathiophene monomer **T8$_3$** designed and synthesized in the present research was ideally suited for the purpose of an artificial DNA sequencing.

What was the inspiration for this cover design?

The "inherently chiral" spider (*S*-**T8$_3$**) has woven a highly selective chiral web, in which enantiomorphic insects (L- and D-DOPA, *R*- and *S*-FcA) are differently entrapped. L-DOPA and S-FcA are more easily captured and, as a consequence, their electrochemical oxidation takes place at different potentials