

Oligothiophenes: synthesis, characterization and applications as semiconductors in organic thin film transistors

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Oligomeric and polymeric thiophene derivatives are probably the most studied and used organic semiconductor materials due to their excellent charge transport properties and well-established synthetic procedures. This work can be divided into 3 different phases:

- 1) the synthesis of oligothiophenes that have a D-A or A-D-A molecular architecture, where there is a central donor core with one or two acceptor groups at the end;
- 2) electrochemical and optical characterization of these molecules;
- 3) the application of one of these molecules as an organic semiconductor for thin-film transistors.

The preliminary test results were quite interesting.