Selective reduction and sonoassisted electrodimerization of substituted benzothiophenes

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Substituted benzothiophenes are promising precursors for liquid crystals. Three halogenoderivatives (3-chloro-, 3-bromo- and 3-iodobenzothiophenes) were investigated electrochemically. The first two-electron reduction process is irreversible and corresponds to the splitting off the halogenide. Under non-aqueous conditions the partial dimeration of primary radicals are observed. The intermediates and products were followed by UV/VIS spectrometry and by HPLC. In order to promote dimeration, ultrasonication was applied during preparative electroreduction.