

Synthesis of the novel chalcones containing the ethylenedioxythiophene moiety

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Abstract

With an aim to prepare electroconducting polymer films there was prepared a series of chalcones including 3,4-ethylenedioxythiophene and thiophene moieties. Optical properties of all the synthesized compounds were investigated. It has been shown that the lengthening of the conjugation chain results in the bathochromic shift of absorption maxima if compared with those of the parent compounds. The band gaps (E_g^{opt}) have been calculated using the values of the longest absorption wavelengths (λ_{onset}); they comprises 2.58 eV for 2,5-di{4-[1-oxo-3-(thiophen-2-yl)-prop-2-enyl]phenyl}-3,4-ethylenedioxythiophene and 1.93 eV – for 5,5''-di[3-oxo-3-(thiophen-2-yl)-prop-1-enyl]-(EDOT)₃.