Physico-Chemical nanomaterials science

About possible mechanisms of nanoconductivity in polyenes polymers
The charge solitons at extremely weak external fields

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Linear conjugated systems are called molecular compounds where the alternation of simple and multiple bonds. In general, the linear conjugated systems, which will be discussed here can be represented by the formula: $[R_1 \ (CH)_m \ R_2]$, where R1 and R2 - terminal group connected to the polymethine chain. These systems can be either electric neutral and charged positively or negatively - depending on what they injected - electron or hole. Methine carbon atom of (CH) in the chain is in sp2-hybridized state. To explain the properties of some organic compounds such as quasi-metallic conductivity, a significant change in the spectral properties of ionic dyes that absorb and emit light in the near infrared region of the spectrum [1-2] managed, including through the use of the concept of solitons. Established that injection of electrons / holes in the conduction band leads to soliton level appearance inside the restricted area and this is accompanied by marked shift of the valence band top and the conduction band bottom, when electron injected - downward energy, in the case of holes injection - in the direction of energy increasing [1-3]. In this work we use the charge transfer model based on the concept of solitons, according to Davidov A. [4] which complements and develops other models [1-3].

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