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Role of Charge-Transfer Complexes in Regulation of Processes Associated with Redistribution Electron Density in Biocomposite Systems

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In this paper a simple and computationally convenient model for description of the influence of external periodic electric field on the electron transfer processes in the biocomposites is represented. The outlined theoretical approach allows to obtain the system of differential equations describing the electron and vibrational dynamics in the three-center charge-transfer complex integrated with an organic matrix As a result, by numerical simulation of the obtained system of differential equations two interesting sets of the electron density distribution regimes have been found. From the analysis and comparison these sets of regimes follows that this model gives a rich material for the biotechnological applications because help to reveal the optimal ways of control for the physical characteristics of organic nanocomposites and the kinetic processes in such systems.