

PHOTOINDUCED CURRENT THROUGH A SINGLE MOLECULE

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S u m m a r y

We propose a kinetic model of formation of the photoinduced current through a single organic molecule placed between two metal electrodes. An analytical expression for the combined thermally activated inelastic and distant elastic interelectrode currents with participation of the neutral, charged, and photoexcited states of the molecule is found. The obtained expression is used for the analysis of a behavior of the current and the differential conductivity of the molecule depending on the potential difference applied to the electrodes, as well as on the frequency of the external electromagnetic radiation. We discovered a photostimulated effect of switching between the conducting and low-conducting states of the molecule accompanied by the variation of its conductivity by an order of magnitude.