

FORMATION OF ELECTROLUMINESCENCE
IN AN ELECTRODE–MOLECULE–ELECTRODE
SYSTEM

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S u m m a r y

The kinetics of electroluminescence formation in an electrode–molecule–electrode system has been considered in the framework of the HOMO–LUMO model. The appearance of electroluminescence in a charge-neutral molecule is shown to be driven by the hopping and tunneling mechanisms of electron transfer between the electrodes. The corresponding electron transmission is found to occur with the participation of both real and virtual states of the charged molecule. Conditions for the electron transmission through the molecule to occur by the hopping and tunneling mechanisms in the resonant regime are determined. In this case, the molecular electrofluorescence and molecular phosphorescence, as well as the current through the molecule, achieve their maximum values.