



Interaction of Electrons with Vibrating Molecules

By Ivan Pshenichnyuk

LAP Lambert Academic Publishing Okt 2012, 2012. Taschenbuch. Book Condition: Neu. 220x150x6 mm. This item is printed on demand - Print on Demand Neuware - The idea of the molecular electronics (or moletronics, as it is also called sometimes) is to use molecules as building blocks of an electronic circuits. It was demonstrated that single molecules can act as a vast variety of different devices: switches, rectifiers or diodes, memory bits, transistors and pumps. Internal degrees of freedom have a strong influence on the charge transport properties of single molecules and responsible for many specific phenomena which can be used in device modeling. Here we formulate a set of models and collect the necessary theoretical tools to study inelastic charge transport through single molecules beyond the harmonic approximation. The interaction of electric current and anharmonic molecular vibrations lies in the basis of the electromechanical molecular motor idea, which is discussed in details in this book. 92 pp. Englisch.

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