



Injection and Recombination in Organic Semiconductor Devices

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Book Condition: New. Publisher/Verlag: VDM Verlag Dr. Müller | A Study on Basic Mechanisms in Organic Electronic Devices | The potential for a substantial impact on the market is attributed to electronic devices based on organic materials. For instance the production of solar cells and light emitting diodes employing conjugated polymers can take advantage of using well established printing methods. Novel materials and concepts are steadily developed in the necessary process of reaching the readiness for marketing. However, also the fundamental mechanisms need to be investigated and understood. This study deals with basic phenomena such as injection and recombination processes of charge carriers in films of solution processed organic semiconductors. Spectroscopic methods like Electroabsorption and transient photocurrent measurements are employed to point out the origin of the open circuit voltage obtainable in organic photovoltaic devices and to correlate it to material and electrode properties. The signature of charge transport and recombination on impedance spectra is investigated. A frequently observed phenomenon in organic semiconductor devices - negative capacitance - is introduced and explained as a sensitive tool to study recombination processes. | Format: Paperback | Language/Sprache: english | 160 gr | 108 pp.



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