Stellingen

behorende bij het proefschrift

Simulation of Charge Transport in Organic Semiconductors
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1. Charge transport in MEH-PPV is driven by nuclear tunneling. (Chapter 2)
2. The computational efficiency per charge carrier of a massively parallel implementation of the KMC algorithm increases with the number of charge carriers per computation unit (Chapter 3)
3. The exact arithmetic that is required for repetitive addition and subtraction of particle-particle interactions can be obtained by using a homogeneously spaced subset of the floating point numbers. (Chapter 3)
4. After injection, energetically excited charge carriers thermalize to their equilibrium level within 10 nanometers of the injecting contact. (Chapter 4)
5. Energetically excited photo-induced charge carriers only affect the steady-state charge carrier mobilities significantly when the generation rates exceed values that correspond to illumination intensities of 1 Sun. (Chapter 4)
6. In state-of-the-art OPV devices, reducing surface recombination velocities only improves OPV performance when bimolecular recombination is very weak. (Chapter 5)
7. Charge blocking layers in OPV devices enhance the power conversion efficiency by preventing bimolecular recombination next to the electrodes, rather than by reducing surface recombination. (Chapter 5)
8. Although straightforward solutions are less efficient than optimized solutions, the additionally required implementation time and added complexity may make the straightforward solution a better candidate.
9. You only understand a topic once you can clearly explain it to another person.