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Propositions

accompanying the dissertation

REDUCING LOSSES IN SOLUTION PROCESSED ORGANIC SOLAR CELLS

Azadeh Rahimichatri

1. In solar cells with highly reduced recombination strength, the recombination of induced charges near the electrodes with photo-generated charges can reduce the net recombination lifetime. (chapter 2)
2. There is a negative correlation between FF and the ratio of the rates of recombination and extraction in non-fullerene acceptor organic solar cells using ITIC. (chapter 3)
3. The temporal response of the current under an applied bias voltage can be helpful to study the doping processes in different types of doped organic semiconductors. (chapter 4)
4. There is no intrinsic meaning in any physical phenomenon. However, as a result of the reaction of a cognitive agent to that phenomenon, a meaning is created.¹ The following is a meaning created by the author of this thesis, inspired by relating the physical experiments described in chapter 5 of this thesis and real-life experiences: Whether one gets stronger or weaker after a traumatic event, depends on the tolerance threshold of the person at the relevant level, the strength of suffering, the number of past traumas, the time scale the response is monitored, and on how strength or weakness is defined. One may read this as, opposed to Friedrich Nietzsche's aphorism, what doesn't kill us, does not necessarily make us stronger.

¹Krzanowski, R. What Is Physical Information? *Philosophies* 2020, 5, 10.

5. Backward rationalization may not only occur in life events but also is hidden in many scientific papers: The motivation is often revised in response to unexpected results when presenting the story. One root cause of this is the competition fueled by the scientific communities and funding agencies, which influences how the researchers perceive the 'best' way of telling the story. Another underlying cause might be the willingness of the researchers to create, polish, and influence.
6. Reliability of any given experimental result depends on both the hardware as well as the software. It can be seen, for example, in the impact of societal trust on questioning a polymerase chain reaction (PCR) test result.
7. Social systems act based on their benefits. An example is the health care system, which provides little preventive support. The fashion industry is another example, the survival of which depends on the existence of citizens feeling not good enough about the way they look.
8. Decay might not be ultimately preventable; yet, via trial and error, new methods can be discovered to slow down its rate.