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## **Towards optical detection of a single electron**

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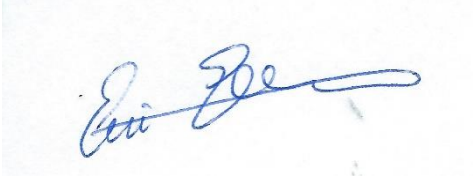
# Stellingen

Behorende bij het proefschrift

## Towards Optical Detection of a Single Electron

1. The dipole moment created by breaking a guest's symmetry by an asymmetric matrix opens a new route towards electric-field nanosensors and frequency-tuneable single-photon sources in various spectral ranges. Chapter 2 of this thesis.
2. Laser-induced charge generation mechanisms are surprisingly complex but can be elucidated by observations on single molecules. Chapter 3 of this thesis.
3. DBT-doped DBN nanocrystals not only can help to locate single-electron-transistor nanostructures, but they also enable new developments in electric-field scanning microscopy. Chapter 3 and 6 of this thesis.
4. Protecting nanocircuits from damage from electrostatic charges is challenging and deserves dedicated investigation. Chapters 4 and 5 of this thesis.
5. The technique of microspacing-in-air sublimation, as introduced by Ye et al., is not just a quick method to grow pure single crystals for organic electronic and optics, but also provides a new method to grow doped crystals for single-molecule studies. Xing Ye et al., *Chem. Mater.* **2018**, 30, 412-420.
6. Verhart *et al.* unsuccessfully searched for the triplet state of molecules by recording phosphorescence spectra. This research should be repeated using lasers with automatic tuning, that have become commercially available recently. N. Verhart et al., *Phys. Chem. Chem. Phys.* **2016**, 18:17655-17659.
7. Although citizen participation in research via open-access data sets, such as those that have been made available by Pereira et al., may help scientists to solve complicated problems, the main reason for open science is that it allows access to science for citizens from all over the world, including researchers in countries with little budget to join experimental projects. B.B.P. Pereira et al., arXiv:1909.04534. (**2019**).
8. It seems unlikely that molecular electronics will surpass the recent advances in silicon technology regarding miniaturization. Hence, the field of molecular electronics should only focus on fundamental, question-driven research. *Nat Commun* 11, 3592 (**2020**).
9. Old and unused equipment at universities in the West can be usefully employed to strengthen science education in developing countries instead of being dumped in warehouses or being destroyed.

10. Full female participation in science should be stimulated already in primary and high school instead of focusing on gender balance at universities.

A handwritten signature in blue ink, appearing to read "Eric Zee", with a long horizontal stroke extending to the right.