

PROPOSITIONS

accompanying the dissertation

Ion Migration in Lead Halide Perovskite Solar Cells

by

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1. Migration of the MA⁺ cation can be affected by changing the halide anion X⁻ component in the MAPbX₃ perovskite structure.
2. Halide migration is promoted in mixed-halide perovskites compared to pure-halide perovskites.
3. When changing the grain size in polycrystalline perovskite thin films, one can affect the pathway of ion migration within these perovskite films.
4. A thin 2D perovskite layer can already strongly affect the ion migration dynamics in a 2D/3D perovskite heterostructure, where the 3D active layer is much thicker.
5. When scientists say they “stand on the shoulders of giants”, they are mostly thinking of men scientists. The lack of visibility of women scientists is a structural component of sexism in science.
6. Instead of “climate change”, we should refer to the “climate crisis”, or the “climate emergency”.
7. The mental health of scientists is negatively affected by the present academic culture. The motto of “publish or perish” is a burden for all and drives away talented researchers.
8. Science funding is now too focused on single projects, rather than through continuous and steady department funding. Scientists should not be considered as freelancers - this promotes competition rather than collaboration.
9. Innovation is hard to predict *a priori*. There should always be a specific budget for fundamental science, where one does not have any specific application in mind.
10. Scientists never live in a purely abstract world – while we strive for objectivity in our fields of study, we must never forget that we remain subjective as individuals.