Master's Thesis on Developing Self-Assembled Monolayer Molecules for Metal Oxide–Free Perovskite Solar Cells

We are offering a thesis project focused on creating and testing SAM (self-assembled monolayer) molecules to serve as a metal oxide-free interface between perovskite absorbers and ITO/glass substrates. Eliminating the metal oxide layer simplifies the overall device structure, improves reproducibility, and offers better stability against degradation. It also opens up more efficient recycling pathways for end-of-life solar cells.

Who We're Looking For

- Background in chemistry, materials science, or a related field.
- Interest in both multi-step organic synthesis and solar cell fabrication.
- Willingness to address cross-disciplinary challenges to improve device performance.

Project Tasks

- Synthesize and characterize novel SAM molecules.
- Fabricate perovskite solar cells incorporating these SAM layers in place of metal oxide.
- Evaluate device performance and stability under various conditions.
- Investigate the recyclability improvements enabled by the metal oxide-free architecture.

Support and Supervision template

You will receive guidance in organic synthesis, SAM formation, and device fabrication from experienced researchers in both fields.

Starting date

Immediate start is possible.

Contact Details

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