

Bachelor Thesis – Correlation of Spectrally Resolved UVPL Measurements with PL Imaging of Perovskite Solar Modules

Perovskite photovoltaics are among the most promising next-generation photovoltaic technologies. To better understand and characterize their performance, advanced optical characterization techniques are required.

This bachelor thesis aims to investigate the correlation between spectrally resolved UV photoluminescence (UVPL), photoluminescence (PL) imaging, and electroluminescence (EL) imaging of perovskite solar modules.

Objective : Explore correlations between UVPL, PL, and EL measurements of perovskite solar modules using data-driven and machine learning approaches.

Tasks

- Acquisition of UVPL spectra, PL, and EL images
- Data processing and analysis
- Correlation of spectral and imaging data
- Identification of characteristic patterns
- Application of AI/ML methods for pattern recognition and feature extraction

Qualifications

- Student of Material Science, Process Engineering, Physics or a related field
- Interest in photovoltaics and experimental research
- Knowledge of a programming language, such as Python or MATLAB is advantageous

Contact Information

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