Universität Stuttgart
Institut für Photovoltaik (*ipv*)
Hocheffiziente Solarzellen

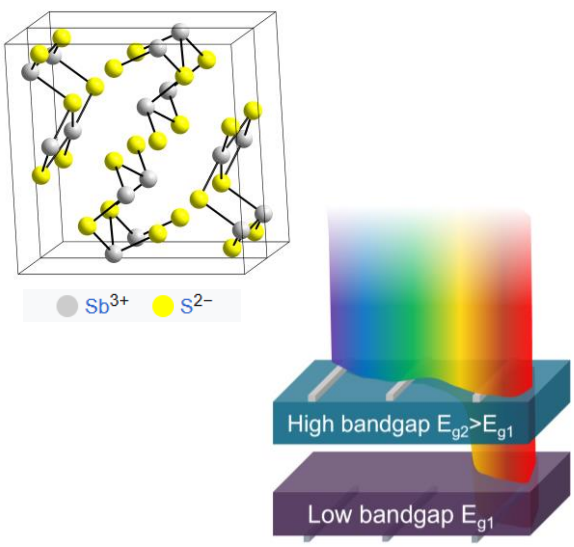
Forschungsarbeit
Masterarbeit

Development of 4th generation solar cells

Silicon-based tandem solar cells with wide bandgap top cells reach high sunlight-to-electricity conversion efficiencies up to 35% and are on the roadmap of most Si photovoltaic module manufacturers. So far, most research has focused on perovskites/Si tandem cells, yet the Pb-content of metal-halide perovskites and their degradation endangers the ongoing commercialization.

We therefore investigate Sb_2S_3 as alternative, non-toxic, earth-abundant top cell material.

The key task in this thesis will be the development of Sb_2S_3 thin-film solar cells. This includes the fabrication of these novel devices in the lab and their thorough characterization by JV-analysis, photoluminescence, XRD, UV-VIS…..



Tasks:

- Fabrication of Sb_2S_3 solar cells
- Optical and electrical characterization of the produced films and devices
- Data analysis
- Literature research

Requirements:

- Good knowledge of optoelectronics and/or photovoltaics
- Interest in lab work and device manufacturing

This project can be started immediately. You should be able to work in systematic manner. The report can be written **in German or in English.**
If you are interested, please feel free to contact:

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