

Chapter 10

Outlook

Further optimizations of P2 aggregate solar cells might be possible by:

- using lower doped TiO₂ hole blocking layers (prepared, e.g., by SPD or spatial ALD in O₂ at atmospheric pressure)
- using higher amounts of the dye P2 (approx. up to 1×10^{-7} mol/cm²)
- using thinner coarse-porous TiO₂ layers (<1 μm)
- adjusting of the porosity, e.g., with TiO₂ particles between 37 and 100 nm in size
- infiltration of other HTMs into the coarse-porous TiO₂ (e.g. PEDOT:PSS).

Proposed further investigations:

- internal and external quantum efficiency measurements (IQE, EQE)
- efficiency measurements at different illumination intensities
- stability tests (accelerated aging under illumination at elevated temperatures)
- upscaling of the cells and combination to modules.