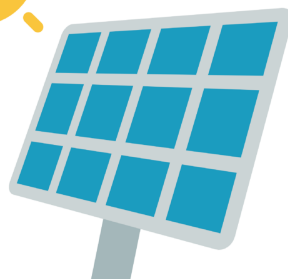


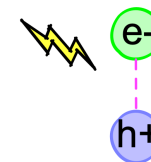


$$H\psi = E\psi$$



Steps for efficient
light-to-electricity
conversion

1. Charge carrier generation



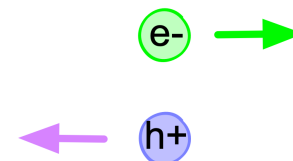
2. Charge carrier separation



electron
transport in
hybrid halide
perovskites

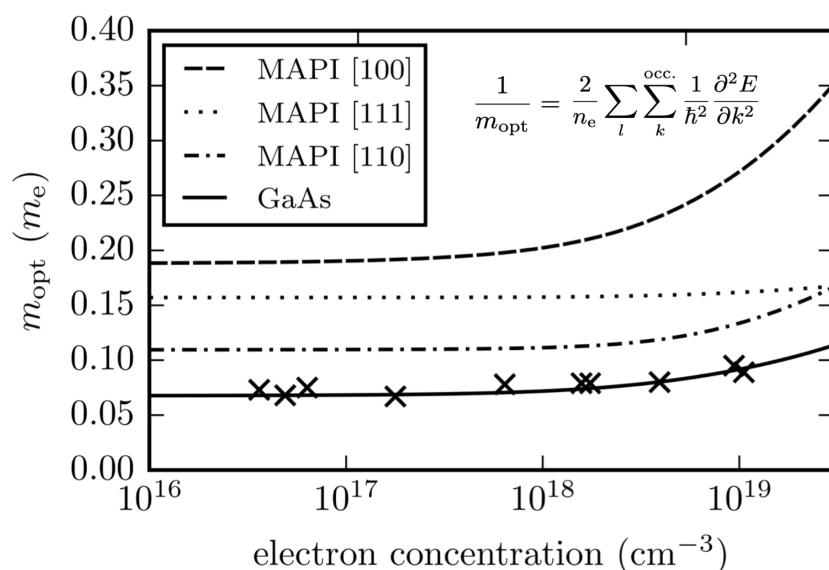


3. Charge carrier transport





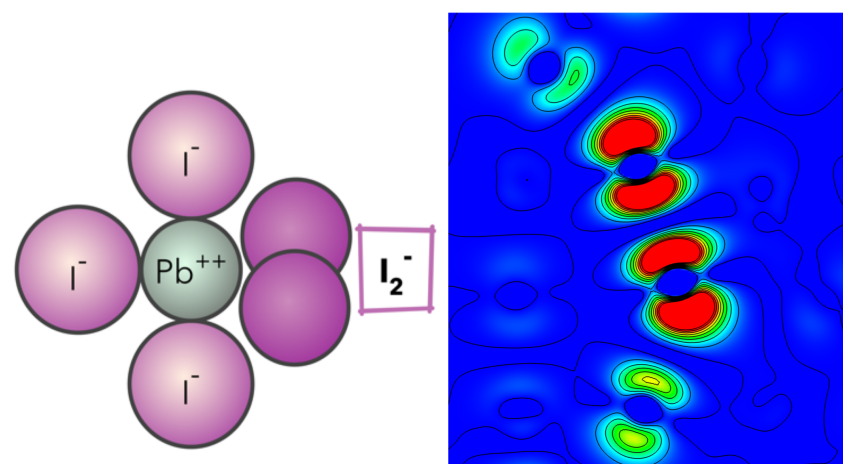
intrinsic limitation: *effective mass*



At a carrier concentration of 10^{20} cm^{-3} the effective mass has doubled

Physical Review B **99** (8), 085207

extrinsic limitation: *point defects*



After hole capture the iodine interstitial forms a I_2^- dimer with a self-trapped hole

ACS Energy Lett. **2** (12), 2713-2714

