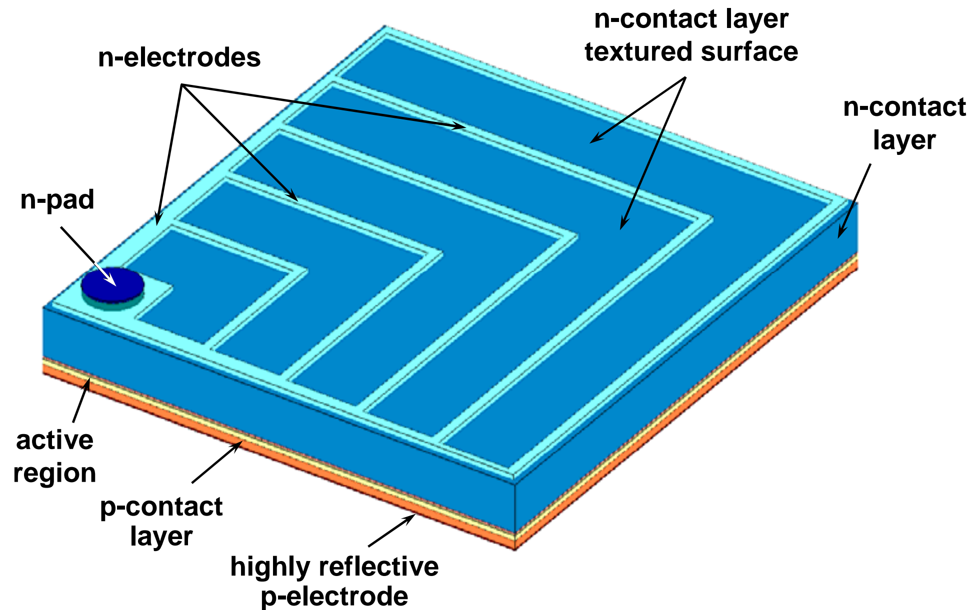
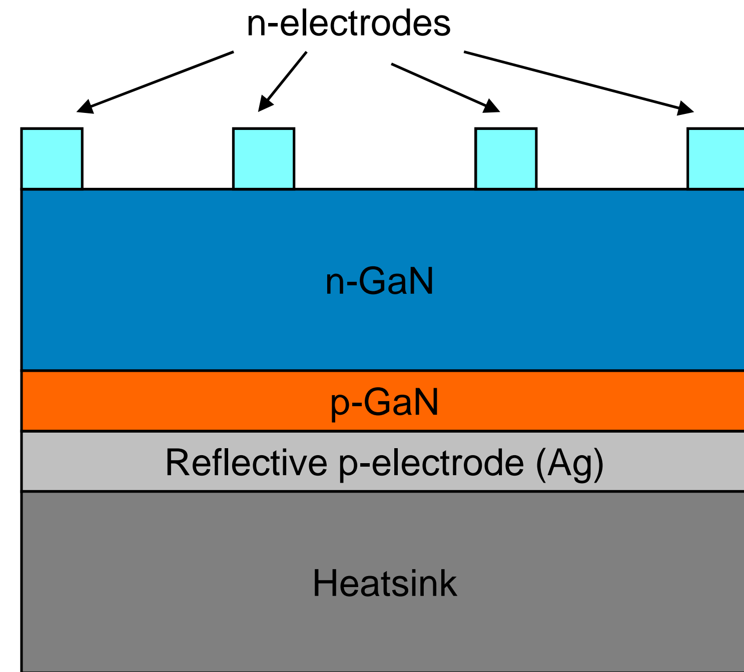
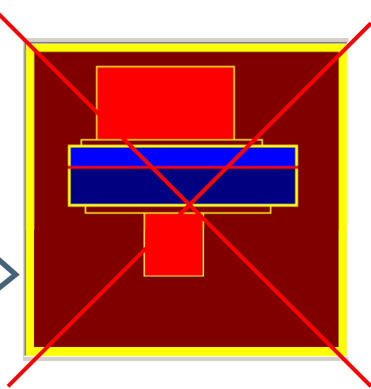
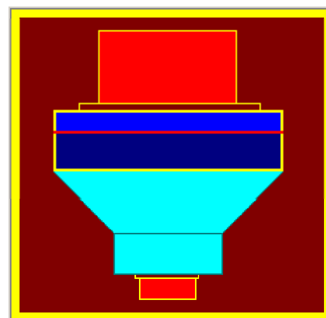




How to simulate with SpeCLED? What project type is needed?

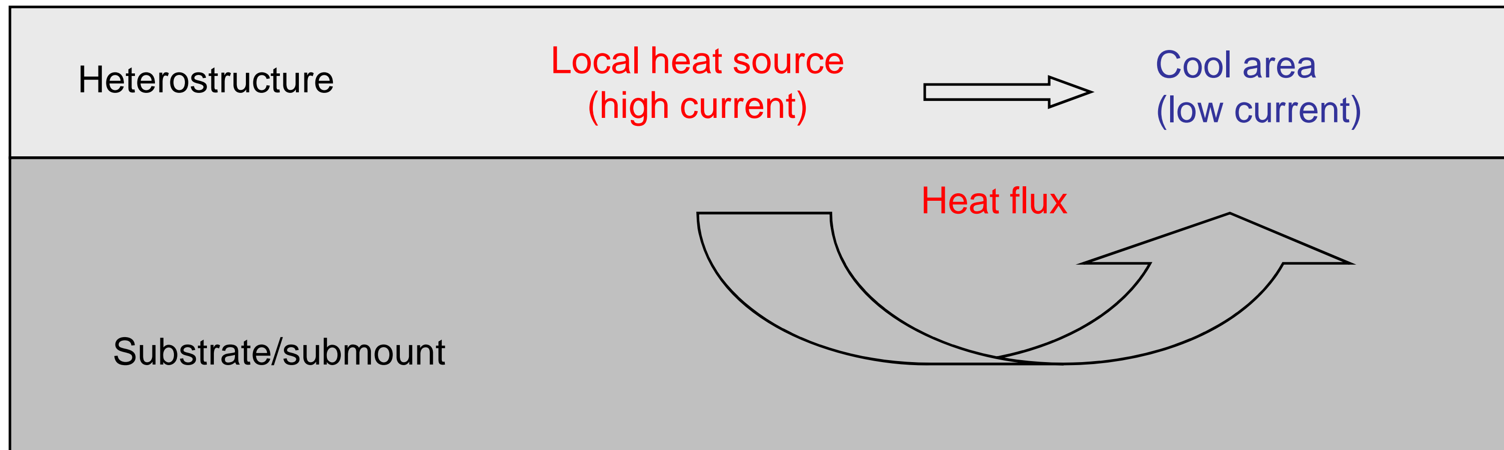
Vertical chip without substrate: Easy and straightforward in setup, but incorrect for the heat transfer problem





Vertical chip without substrate: More sophisticated in setup, but provides correct approach to the heat transfer.

Substrate or submount to be included into heat transfer computation for correct computation of the lateral heat transfer!!!

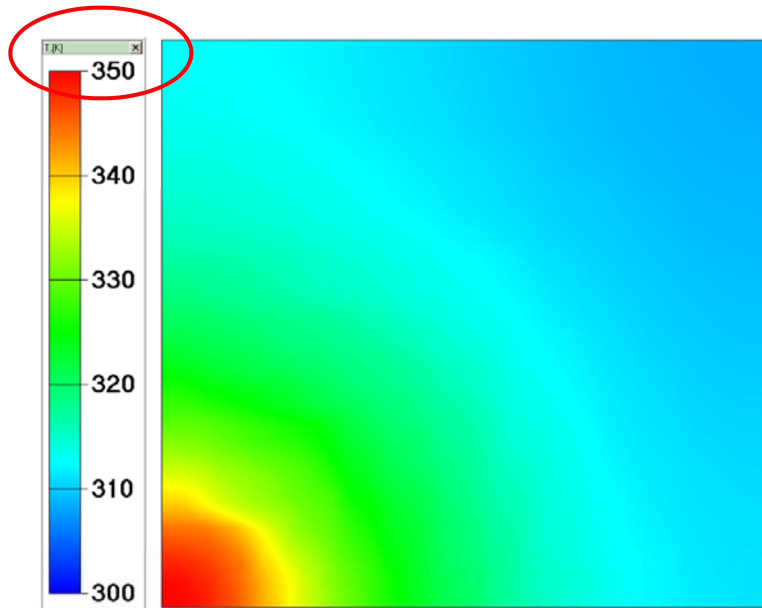


Because of much higher thickness (~50 times), substrate provides better opportunity for lateral heat spreading even if the heat conductivity of the substrate material is lower than that of the heterostructure.

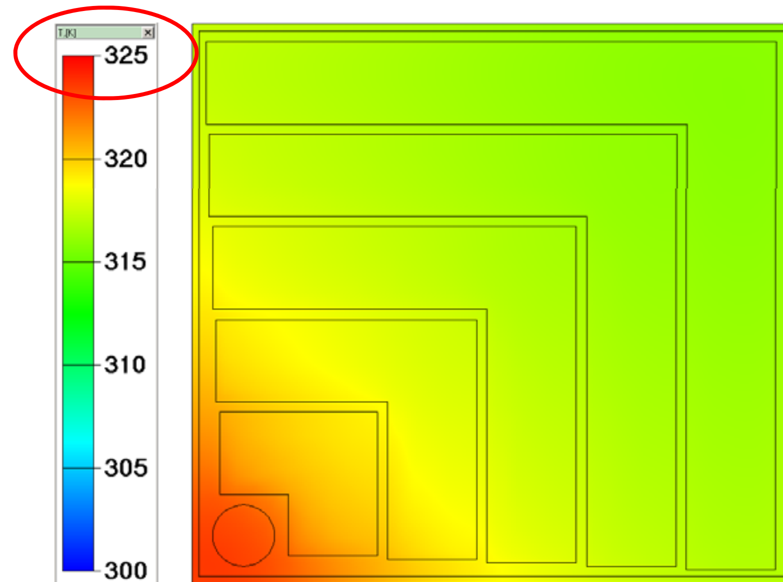
Heat Transfer in Thin-Film Flip-Chip Structures

The local overheating of the high-current regions is dramatically overestimated in computations without substrate

Without substrate



With substrate

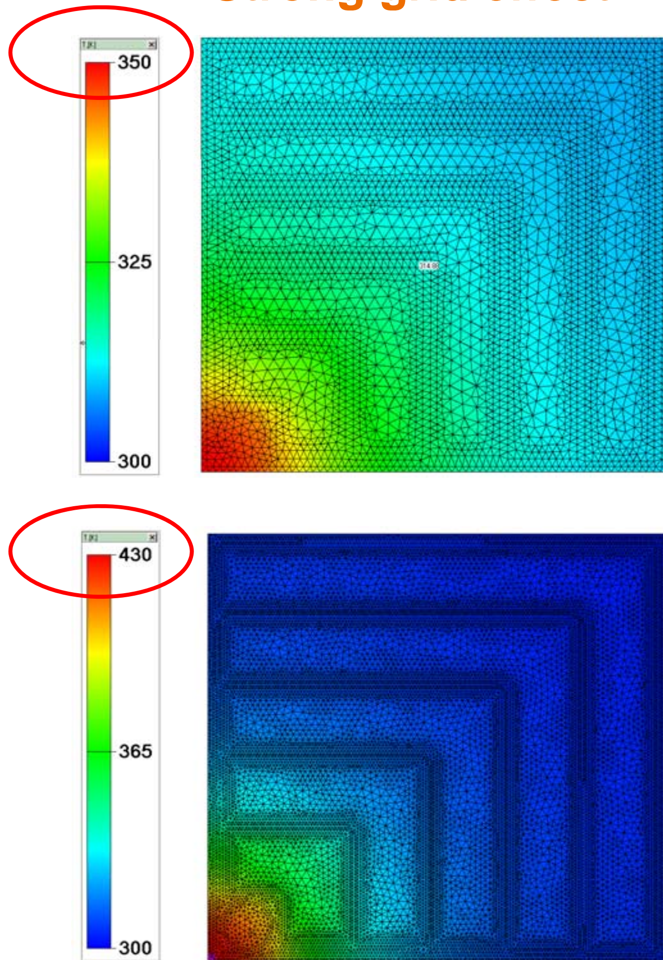


Local overheated is two times overestimated!!!

Grid convergence issues

Without substrate

Strong grid effect



Lateral grid step is two times decreased!

With substrate

No grid effect