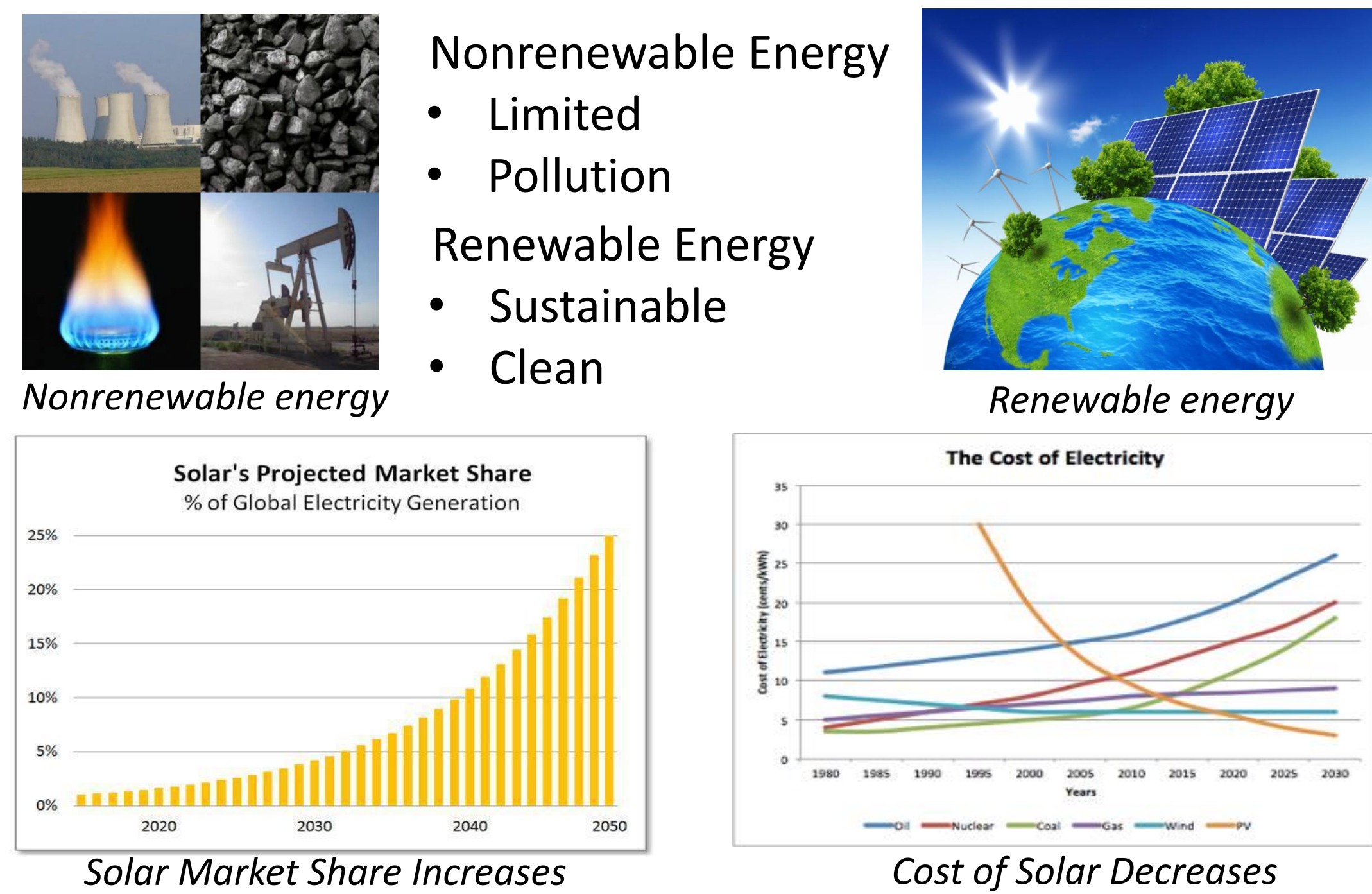
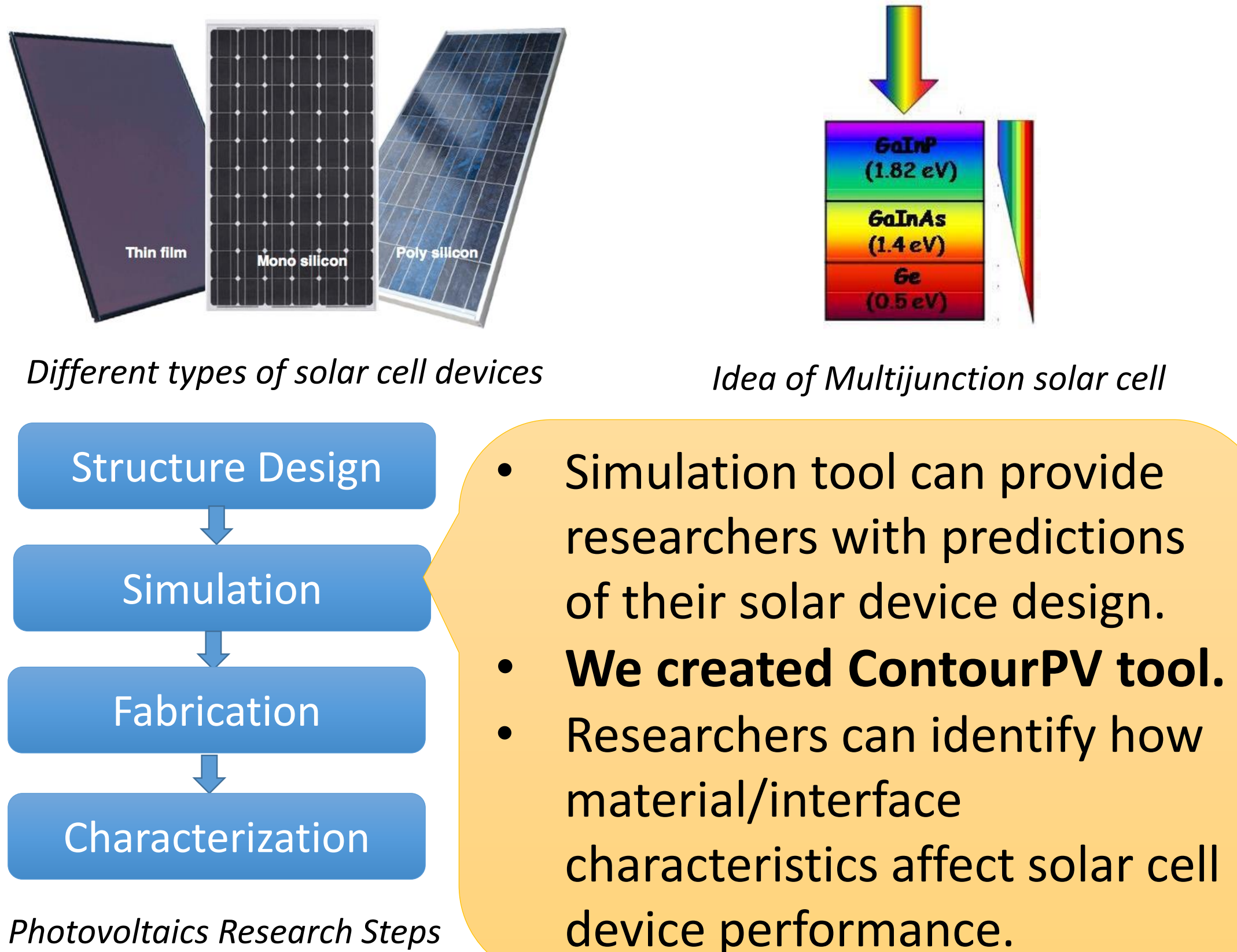


Motivation



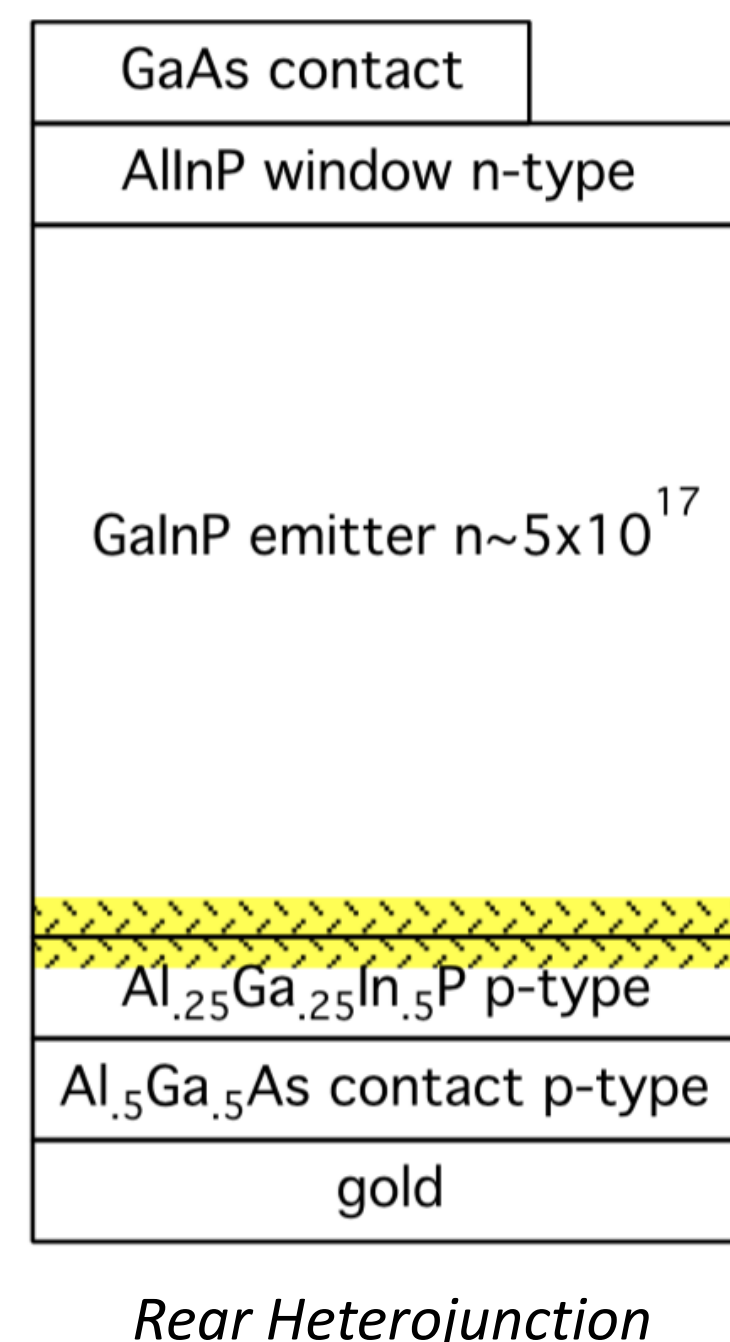
Project Goal



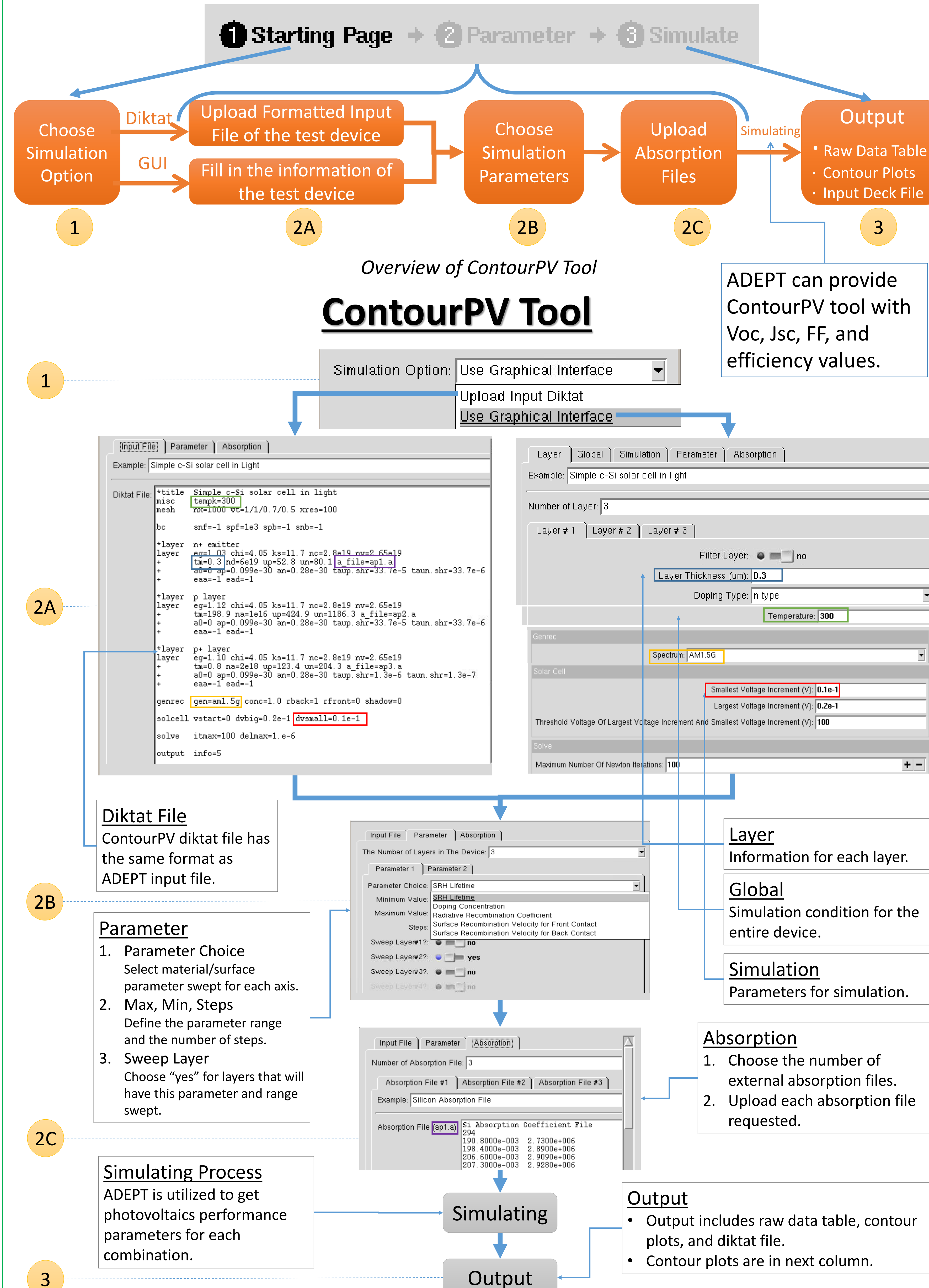
Why ContourPV tool is needed?
ContourPV tool provides more intuitive simulation results to predict the performance of a solar cell design.

How does ContourPV relate to ADEPT?

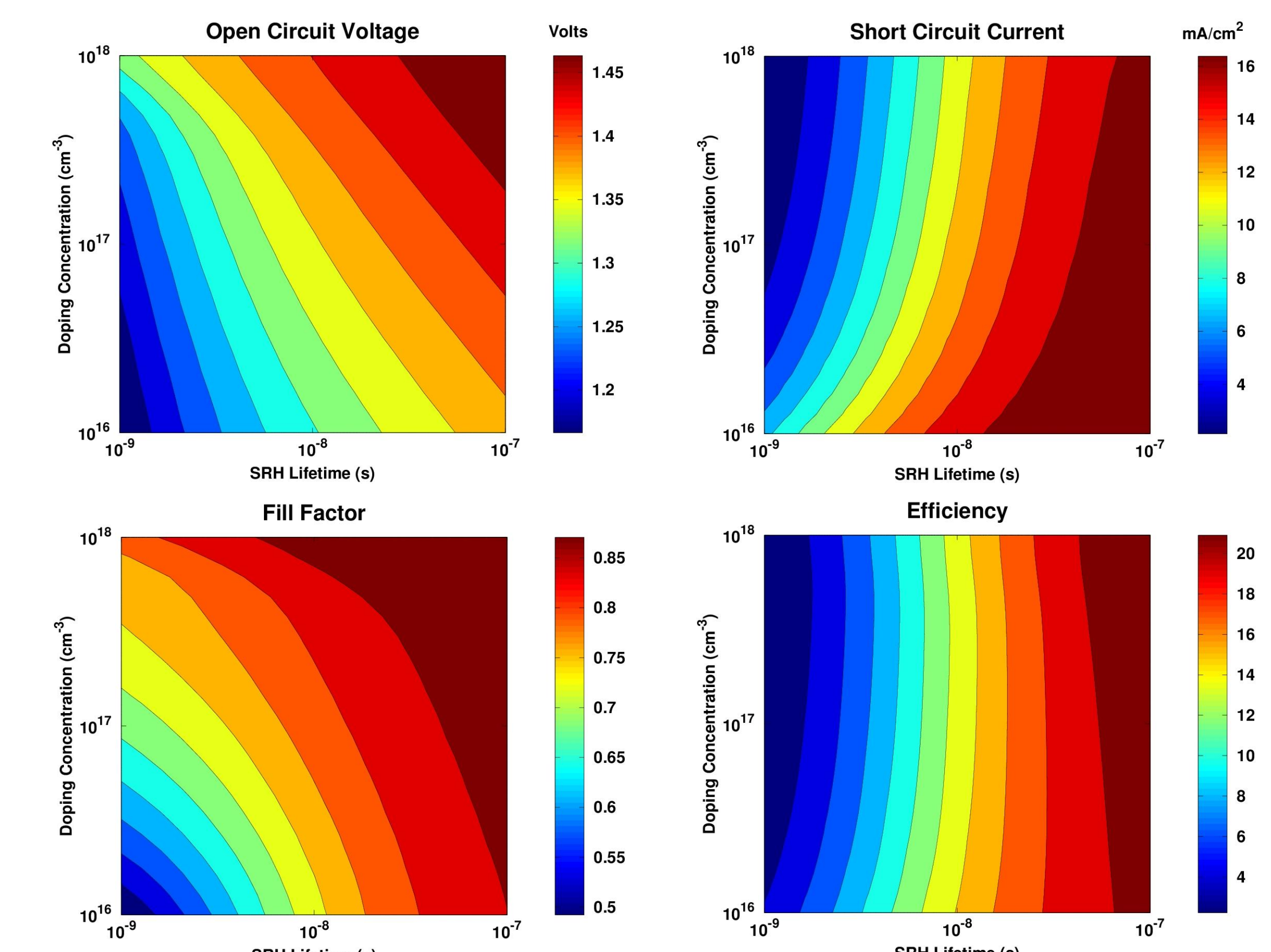
- ADEPT is a simulation tool can provide ContourPV tool with photovoltaics performance data for each combination.
- ContourPV tool uses the same diktat file format and graphical interface as ADEPT for input.



Methodology



Result & Analysis: Contour Plots



Analysis above is for GaInP emitter layer of rear-junction GaInP solar cells. We find that lifetime strongly affects performance – especially short circuit current. Doping increases open circuit voltage.

Conclusion

- Researchers can use ContourPV to analyze how characteristic parameters affect photovoltaic performance for the photovoltaics design.
- Based on simulation analysis, researchers can optimize the design and decrease the number of samples to be fabricated.
- In the future, we will add more material/surface characteristics for analyzing III-V multijunction solar cells.
- The tool is published in nanoHUB and can be accessed via <https://nanohub.org/tools/contourpv>

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