Load the spectrum file

Wavelength in m

Irradiance

Get maximum power by trapezoidally integrating across the entire spectrum

## Absorbance flux

Work out the Planckian effective temperature for each wavelength and save to an array, basically rearrange this equation (multiplied by pi to account for steradians) in terms of T (<https://en.wikipedia.org/wiki/Planck%27s_law>)

A picture containing table

Description automatically generated

Determine photon energy for each wavelength

Work out the photon flux of energy for each energy value (DOI: 10.1002/pip.1156)

Diagram

Description automatically generated with medium confidence

Need to integrate this expression from the band gap of the cell to infinity, and then save for all the different bandgaps we calculate into some sort of lookup table/matrix, can then interpolate photon flux for the bandgap we pick if needed.

## Emittance flux

This is given by the emission flux integral which is a function of the bandgap (sets the lower limit of the integral, the upper limit can be assumed to be infinity) and the external potential mu = qV (q is the charge of the electron) of the cell (as well as the temperature of the cell) (DOI: 10.1002/pip.799)

Graphical user interface, application, Word

Description automatically generated

P is 2 for particle flux, 3 for energy flux

Need to integrate this integral somehow and save all these values into a massive matrix (rows Eg, columns V)

