**Solarcell characterizations/Measurements**

1. **IV Measurement**

Input: solar cell, light source

Settings: scan rate (V/s), light intensity (mW/cm^2), active area (cm^2), integration time (ms), settling time (ms), compliance (mA/cm^2)  
Output: Tabular data, 2 columns: voltage (V), current (A) or current\_density (A/cm^2)

Data processing: JV analysis

Derived quantities: Solar cell efficiency (nd), open circuit voltage (V), short circuit current density (A/cm^2), fill factor (nd), potential at MMP (V), current density at MPP (mA/cm^2), series resistance (Omega\*cm^2), shunt resistance (Omega\*cm^2)

1. **EQE Measurement**

Input: solar cell

Settings: light bias (mW/cm^2),  
Output: Tabular data, 2 columns: photon energy (eV) or photon wavelength (nm), counts

Data processing: EQE Analysis

Derived quantities: EQE Bandgap (eV), integrated jsc (mA/cm^2), integrated j0rad (mA/cm^2), voc rad (V), urbach energy (eV), urbach energy fit standard deviation (eV)

1. **Time-Resolved Photoluminescence**

Input: solar cell

Settings: repetition rate (MHz), spotsize (1/cm^2), laser power (nW), excitation peak wavelength (nm), excitation FWHM (nm), excitation attenuation filter, signal attenuation filter, ns per bin (ns)  
Output: Tabular data, 2 columns: time (ns), counts

Data processing:

Derived quantities:

1. **UV/VIS-Spectroscopy**

Input: solar cell

Settings:   
Output: Tabular data, 2 columns: wavelength (nm), intensity

Data processing:

Derived quantities:

1. **Photoluminescence Measurement**

Input: solar cell

Settings:   
Output: Tabular data

Data processing:

Derived quantities:

1. **Electroluminescence Measurement**

Input: solar cell

Settings:   
Output: Tabular data

Data processing:

Derived quantities:

1. **Transient optoelectronic Measurement**

Input: solar cell

Settings:   
Output: Tabular data

Data processing:

Derived quantities: