# Using the PV Cell equivalent circuit model

- Find the maximum power point voltage, maximum power point current, and maximum output power of a 156 x 156 mm cell with equivalent circuit parameters in the chart below
  - when the sun has irradiance of the standard test conditions (1000 W/m$^2$)
    - $V_{max}$ =               $I_{max}$ =               $P_{max}$ =
  - for early in the morning when the irradiance is only 500 W/m$^2$
    - $V_{max}$ =               $I_{max}$ =               $P_{max}$ =

- Find the maximum power point voltage, maximum power point current, and maximum output power at standard test conditions (1000W/m$^2$) for cell made of the same material but of smaller area = 100 x 100 mm.
  - $V_{max}$ =               $I_{max}$ =               $P_{max}$ =

Cell parameters

| | |
|---|---:|
| $J_L$ (mA/cm$^2$ @ 1000 W/m$^2$) | 38 |
| $J_0$ (mA/cm2) | 1.00E-10 |
| n | 1 |
| T (K) | 300 |
| $R_p$ ($\Omega$-cm$^2$) | 10,000 |
| $R_s$ ($\Omega$-cm$^2$) | 1.2 |