ELEG 340: Solid-State Electronics, Fall 2008

Homework #8 - due Tuesday, 11 November 2008, at the beginning of class

1. Find your favorite solar panel. Use the web or other buyer's guide resource to pick a solar panel with at least 100 Watts power delivery. Give the distributor (seller), vendor (brand), and technical specifications such as I_{sc} and V_{oc}, I_{max}, V_{max}, and P_{max}.   Entries will be evaluated for the most cost effective for least dollars per Watt, and most efficient for power per area under AM1.5 illumination. Winning solar panels will be announced in class.

2. Problem 8.4; p. 433 of Streetman-Banerjee, 6th edition. Include a table of 5 or 6 of your I,V pairs. Hint: pick 5 or 6 currents and use equation in text to calculate and plot the voltage.

3. Problem 7.4, p. 392 of Streetman-Banerjee, 6th edition.

4. Problem 7.5, p. 392 of Streetman-Banerjee, 6th edition. Hint, use Eqns. (7-25) and (7-26) and the ratios given.

5. Problem 7.6 (a) only, p. 392 of Streetman-Banerjee, 6th edition. Hint: for I_C, you may use Eqn. (7-20b) with the approximation that $W_B << L_p$.

  Homework assignments will appear on the web at:
http://www.ece.udel.edu/~kolodzey/courses/eleg340f08.html

  Note: On each homework and report submission, please give your name, the due date, assignment number and the course number.