CORRECTIONS TO HW #5 SOLUTIONS

**Problem 4:** The volume of the plasma etcher is missing from the answer. The GENERATION term should be $V_k n_e n_c$, not $k n_e n_c$. Therefore, $V$ should appear in the numerator of the etch rate.

**Problem 5:** The solution handed out in class is for a 6" wafer. The wafer size wasn't specified in the problem, so the correct solution should have been:

flux of gold from the target, $\Gamma_T = 2.8 \times 10^{19} \text{ s}^{-1} / \text{(area of the target)} = 9 \times 10^{16} \text{ cm}^{-2} \text{ s}^{-1}$

Then, the flux to the wafer is 0.5 times this quantity: $\Gamma_W = 4.5 \times 10^{16} \text{ atoms cm}^{-2} \text{ s}^{-1}$

and the deposition rate is 0.46 µm per minute.

**Problem 6.** A factor of $(8)^{1/2}$ is missing from the thermal velocity term $(8kT/\pi m)^{1/2}$. So the flux of B atoms should be $\sqrt{8}$ higher in both parts. This makes the deposition rate ~1300 µm/min at 1000C and 212 µm at 800 C.