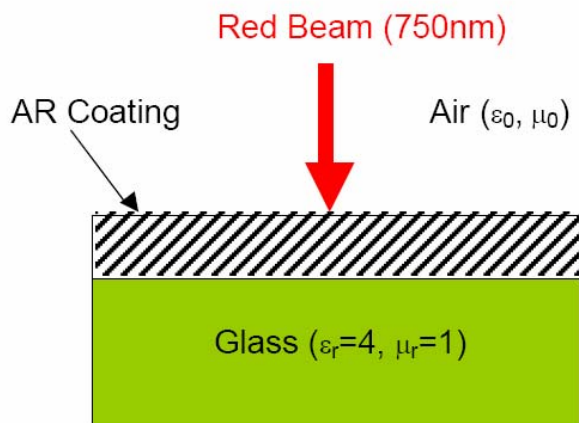


EE 151 Homework 5

Due Thursday, February 19th in class

1. Problem 12.14 in *Engineering Electromagnetics* by Hayt and Buck.
2. Problem 12.6 in *Engineering Electromagnetics* by Hayt and Buck.
3. Problem 12.21 and 12.24 in *Engineering Electromagnetics* by Hayt and Buck.
4. **Anti-reflection(AR) coating:** A transparent dielectric coating is applied to a glass substrate ($\epsilon_r=4, \mu_r=1$) to eliminate the reflection of a normally incident red light [λ_0 (wavelength in free space)=750nm]. (1) Determine the required dielectric constant and thickness of the coating. ($\mu_r=1$) (2) If violet light [$\lambda_0=420\text{nm}$] is shone normally on the coated glass, what percentage of the incident power will be reflected?



5. Use FEMLAB to repeat the problem 4 in homework 1.