PHY 842 ASSIGNMENT #2; due date is Friday September 7

● READING ASSIGNMENT
Wilcox and Thron, Sections 5.4 and 6.10, and Chapter 8.

● PROBLEMS ASSIGNMENT
● INTRUCTIONS
 - Use Gaussian units. (*No credit will be given for calculations in SI units.*)
 - Solutions must be written legibly. Neatness counts. Lack of neatness counts negatively.
 - Start each problem on a new page of paper.
 - Hand in all solutions. Some problems will be graded.

Problem 2.
Exercise 1.1.3.

Problem 3.
Exercise 5.4.2.

Problem 4.
Exercise 5.4.4.

Problem 5.
Exercise 6.10.1.

Problem 6.
The fundamental (i.e., microscopic) equation for conservation of energy in classical electrodynamics is equation 8.14.
(a) Use Maxwell's equations to show that this equation is true. (u and **S** are defined in equations 8.11 and 8.12).
(b) Now prove that equation 8.70 is true for electrodynamics in a linear, homogeneous and isotopic macroscopic material with real and constant susceptibilities. (u and **S** are defined in equations 8.71 and 8.72).