

**HOMEWORK #6**  
**Due at the start of Class on Thursday 11/16/06**

**Readings:**

View the MRI safety video on the website.

Read Nishimura chapters 1 through 4. Preview Chapter 5.

**Problems: (In Nishimura)**

1. From the safety video, answer the following questions: (a) What are helium and nitrogen used for in the MRI system? (b) What does the term quench mean? (c) Why is it dangerous to smoke near an MRI system?
2. Problem 2.3
3. Problem 2.7
4. Problem 4.2
5. Problem 4.3
6. Problem 4.4; For this problem, also use MATLAB to plot  $\Delta S_{xy}(t)$  and  $\Delta S_z(t)$  assuming the T1 values used in Part c. Verify that the maximums are achieved at the times you found in parts (a) and (b).