# 6.730 PHYSICS FOR SOLID STATE APPLICATIONS

**Department of Electrical Engineering and Computer Science**
**Massachusetts Institute of Technology**

## PROBLEM SET 3

Issued: 2-16-00 Due: 2-23-00, at the beginning of class.

**Readings:**
PSSA Chapter 4
PSSA Chapter 5

**Problem 3.1** *Two-dimensional elastic continuum* **PSSA Problem 4.5**

This problem helps you review the arguments that were done in class and extend them to a different dimension.

Hint: $\mathbf{T} = \lambda e \mathbf{I} + 2\mu \mathbf{E}$.

**Problem 3.2** *Lattice Mismatched Epitaxy* **PSSA Problem 4.8**

A nice application.

**Problem 3.3** *Reciprocal Lattice* **SSS Exercises: 2.10, and 2.13.** Answer the questions and submit a simple sketch.

For 2.10 also observe the diffraction patterns with atom B turned off and on. We will explain this difference later.

Monday is a holiday. But **Tuesday, February 22 has the Monday schedule of classes. So we have class on Tuesday, Wednesday and Friday next week.**