**INTRODUCTION**
The National High Magnetic Field Laboratory (NHMFL) is located in Tallahassee, FL at FSU (Florida State University). NHMFL uses magnetic fields for research in physics, biology, bioengineering, chemistry, geophysics, and biochemistry.

**EPITAXY**
"The natural or artificial growth of crystals on a crystalline substrate determines their orientation."

**The MOLeCULAR BEAM EPITAXY (MBE) LAB**

Using MBE, thin films can be grown at the atomic layer thickness. Complex oxides of metals like Lanthanum, Manganese and Strontium are combined to create crystals that sometimes do not exist in nature.

**2 CURRENT PROJECTS**
- Growing complex oxides on a Si substrate: The challenge is to prevent an interfacial SiOx layer from forming.
- Creating interfaces with different complex oxide phases, like LaAlOx/SrTiOx. What is very interesting is that LaAlOx and SrTiOx are both insulators, but at the interface a conductive electron liquid is obtained.

**APPLICATION**
"How do CRTs (Cathode Ray Tubes) apply to you?"

**HOMEWORK**
In order to demonstrate to students the basic principles of MBE, CRTs were designed and constructed to use as illustration tools in our classrooms.

**HOMEMADE CRT DESIGNS**
Research led to homemade units utilizing wine bottles, vacuum flasks, microwave power units and phosphors from used fluorescent tubes.

**THE FINISHED PRODUCT**

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