## Fresnel equations and electromagnetic boundary conditions

Preparatory questions

1. Write down the boundary conditions for electromagnetic radiation at a flat interface that separates vacuum from a transparent material with index of refraction n and show how they are obtained from Maxwell's equations.

2. Define Brewster's angle and describe a method to measure it.

3. Define the critical angle and how it depends on material properties. Describe a method to measure it.

4. Of the following phenomena you will study in this lab - Snell's law, the law of reflection, total internal reflection and Brewster's angle – which ones depend on the transverse nature of the electro-magnetic waves and which do not? Explain why.