

## **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. Which laws of refraction and reflection depend on the transverse nature of the electromagnetic waves and which do not.
3. Define Brewster's angle and describe a method to measure it.
4. Define the critical angle and how it depends on material properties. Describe a method to measure it.