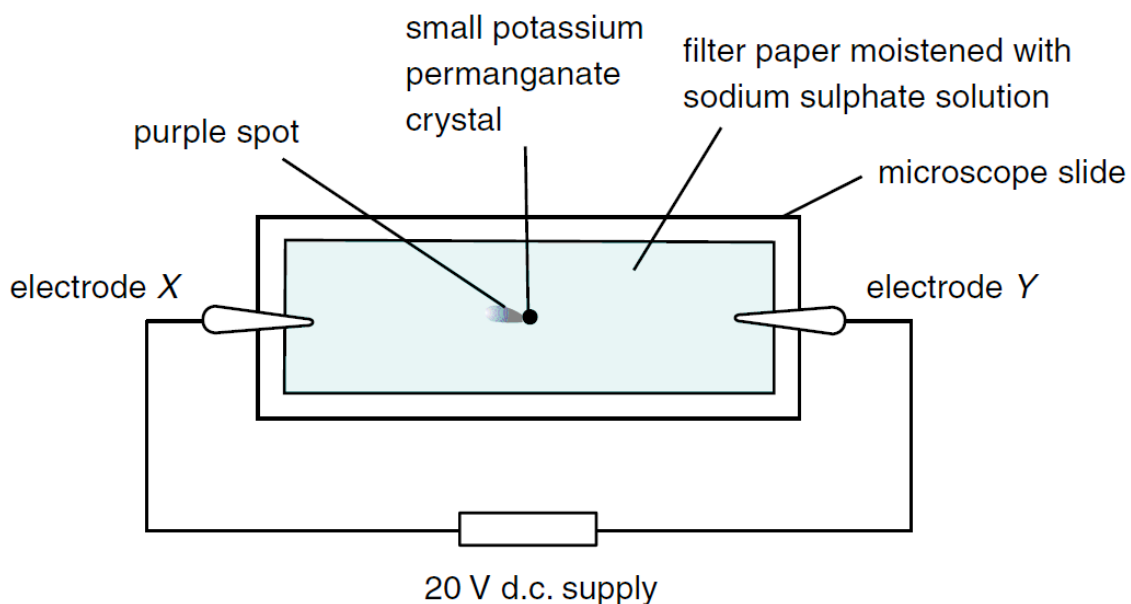


### Quiz (Seeing Ions Move)

The following set-up was used to investigate the migration of ions under the influence of an electric field. A small crystal of potassium permanganate was placed in the middle of a piece of filter paper. The filter paper was moistened with sodium sulphate solution. After the circuit was closed for 5 minutes, a purple spot was found in the position as shown below.



- What is the purpose of moistening the filter paper with sodium sulphate solution?
- Which ion is responsible for the purple spot?
- Which electrode is the positive electrode? Explain your answer.
- If the positive and negative electrodes of the above set-up were reversed, what would happen? Explain your answer.

**Suggested Answer**

- (a) To increase the electrical conductivity of the filter paper.
- (b) Permanganate ion
- (c) Electrode X is the positive electrode because negatively charged permanganate ions are attracted towards the positive electrode.
- (d) The purple spot would move towards electrode Y because negatively charged permanganate ions are attracted towards electrode Y, which is now the positive electrode.