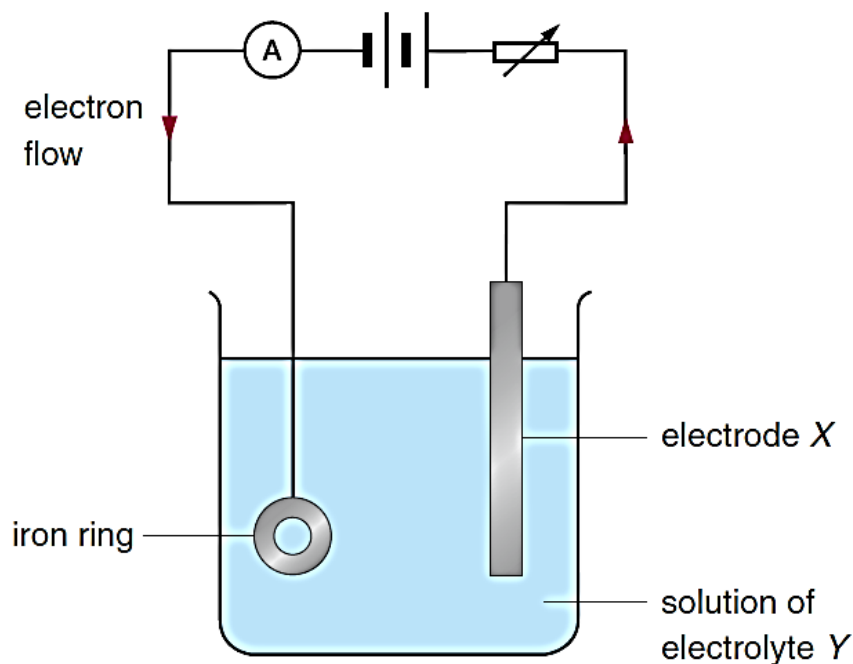


Quiz (Electroplating)

The diagram on the right shows the electroplating of an iron ring with nickel.



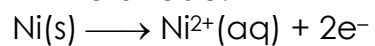
- Suggest a suitable material for electrode X.
- Suggest an electrolyte for the electroplating set-up.
- Write equations, with state symbols, for the reactions at the anode and the cathode respectively.
- The rate of electroplating can be increased by increasing the current flowing in the circuit. However, the current cannot be too high. Give a reason.
- Suggest TWO other methods that can increase the rate of electroplating.

Suggested Answer

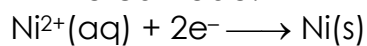
(a) Nickel

(b) Nickel(II) sulphate

(c) At the anode:



At the cathode:



(d) Too high a current can result in a loose spongy metal deposit which may peel off.

- (e) 1. Place the electrode X and the iron ring closer to each other.
2. Use a solution of the electrolyte with a higher concentration.