



# Instruction sheet



## Turning Copper (Cu) coins 'silver' and 'gold'

**CAUTION: you must wear a labcoat, gloves and safety glasses for this experiment!**

### 'Silver' coin

- 1) Carefully add zinc powder to a hot sodium hydroxide solution. The solution may fizz as some of the zinc dissolves, forming sodium zincate and giving off hydrogen gas. You will see a grey solid at the bottom.
- 2) Drop a copper coin into the beaker – make sure that it does not splash up on you. The coin must make contact with the powdered zinc at the bottom of the solution. A Deakin student volunteer will stir it with a glass rod.
- 3) Leave the coin in solution for about 2-3 minutes.
- 4) A Deakin student volunteer will remove the plated coin with tongs. DO NOT PUT YOUR FINGERS INTO THIS SOLUTION even with gloves.
- 5) Rinse the coin with a water bottle to remove traces of sodium hydroxide and sodium zincate and pat-dry it with paper towel. The coin will now look 'silver'.

### 'Gold' coin

**MUST BE DONE AWAY FROM THE SODIUM ZINCATE SOLUTIONS**

- 6) Using tongs or forceps, hold the plated coin in the upper part of a flame for a few seconds. Turn the coin so that both sides are heated equally. Remove from the heat as soon as it starts to change colour.
- 7) Allow the coin to cool. The coin will now look 'gold'.

