

Saving copper from waste

A. Main topics

The module should enable students to understand that waste products contain valuable and useful compounds and that we can do so much more with recovered metals. Besides, we hope to challenge students and create enthusiasm for science, technology and the environment.

- Recycling and reclaiming precious metals in the electronics industry
- Value and use of metals like Copper and Zinc
- Recovery of metals from waste water and producing energy

B. Targeted audience

*** Students in the age of 13 - 16 years**

C. Key concepts

1) In this module we focus on topics, used during Chemistry:

1. single-replacement reactions
2. Redox-reaction
3. Chemical Calculations
4. Quantitative analysis

2) Knowledge & Innovation themes:

- Recycling
- Circular Economy
- Mining

D. Experimental activity:

- Copper recovery by redox-reaction
- Reaction of Zinc and Copper(II) Ion

E. Toolkit material

- 500 mL 0.1M CuSO₄ solution
- 2 ea. 400 mL beakers
- glass stirring rod
- 6.5 x 20 cm zinc strip

F. RM Tutor: Coen Berends