DEMOSOFC





#AcomeAScuola





TO DO

Step 1 – discuss renewable energies with your students

Step 2 – watch DEMOSFC video illustrating DEMOSOFC plant in Collegno with them (you can use the presentation you find among our Resources, if you think it may be useful)

Step 3 – try to build up an Aluminium-Air Battery (you find the scheme and reactions in the following pages)

Step 4 – comment on results and, if you want, share them with us!



Resources

This activity is based on an experiment from the Exploratorium of San Francisco



Aluminium-Air Battery

Materials

- Aluminium foil (10 X 15 cm)
- Activated charcoal (available at aquarium supply stores)
- A saturated salt-water solution
- Paper towels
- 1,5 Volt electric motor (it can be easily found online or it can be taken from a dismissed battery-powered toy) or a LED
- A flat container (it can be a plastic lid or a ceramic dish, for example)

To Do and Notice

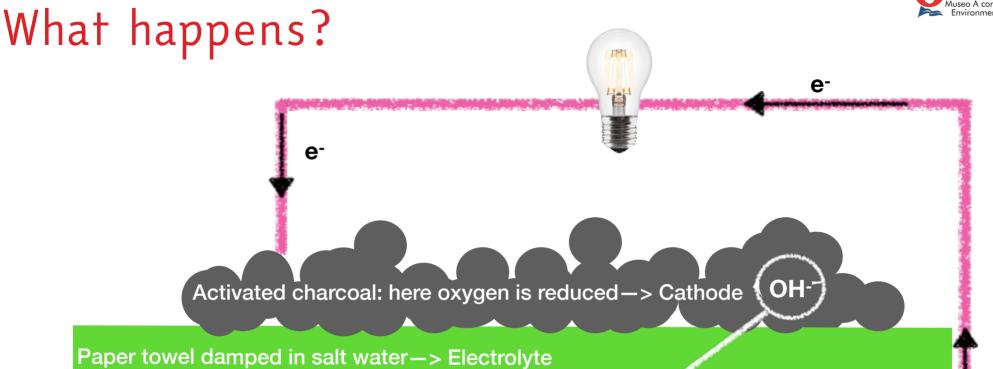
- Prepare a saturated salt-water solution: dissolve salt in a small cup of water until some salt remains on the bottom of the cup. Your solution is ready
- Fold a paper towel into fourths and dampen it with the solution
- Palce the aluminium foil at the bottom of your container
- Place the towel on the foil
- Add a spoonful of activated charcoal on top of the paper towel, then
 pour some of the salt-water solution onto the charcoal until it is
 dampened throughout.
 - NOTE: make sure the charcoal doesn't touch the foil directly!
- Connect one of the poles of your electric motor to the aluminium foil. Firmly press the other one on the pile of charcoal.

What happens?



e- e- e-

e-



Aluminium oxidizes -- > Anode

Cathode: $O_2 + 2H_2O + 4e^-$ 4OH-

Anode: AI + 3OH- AI(OH)₃ + 3e⁻

Total: $4AI + 3O_2 + 6H_2O$ AI(OH)₃



What happens?

Copy and paste this link on your browser:

https://vimeo.com/407573150



