

8.5 Hydrogen and fuel cell



How could you convert the chemical energy of hydrogen to electrical energy?



Basic information and collecting ideas:



Set up:

- | | |
|---------------------------------|---------------------------------------|
| ▪ 1 battery/ 9 V | ▪ 1 silicone tube 7/4 mm |
| ▪ 4 connecting cables/alligator | ▪ saturated soda solution |
| ▪ 1 electrolytic cell | ▪ solar motor + propeller/ 0.1 V/2 mA |
| ▪ 1 pair of safety goggles | ▪ 3 syringes/Luer lock/10 ml |
| ▪ 2 one-way cocks | ▪ 2 test tubes/5 ml |

Build the electrolytic cell as described.

Use only tap water as an exercise the first time.

If you can safely handle the materials, replace the water with a sodium carbonate solution.

1. Connect the 9 V battery to the electrodes for approximately one minute.
2. Connect the solar motor instead to the electrolytic cell of the battery and measure the running time of the motor. Blow ten times vigorously on the propeller while the motor is connected to the electrolytic cell.
3. Stop the solar motor for a very short time on the last breath and measure the time the motor keeps running



Observing and documenting:



Analysing and reflecting:



Doing further research:



Technical application and vocational orientation:

Space for your sketches