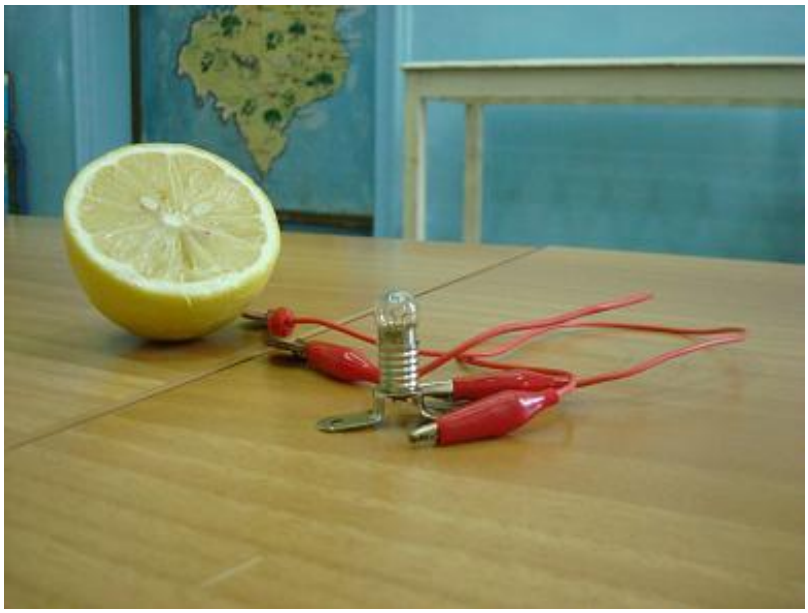


This time we squeeze the current from lemon

Material:



-lemon

-coin,
-nail (preferably galvanized),
-cables,
-battery,

Instruction:

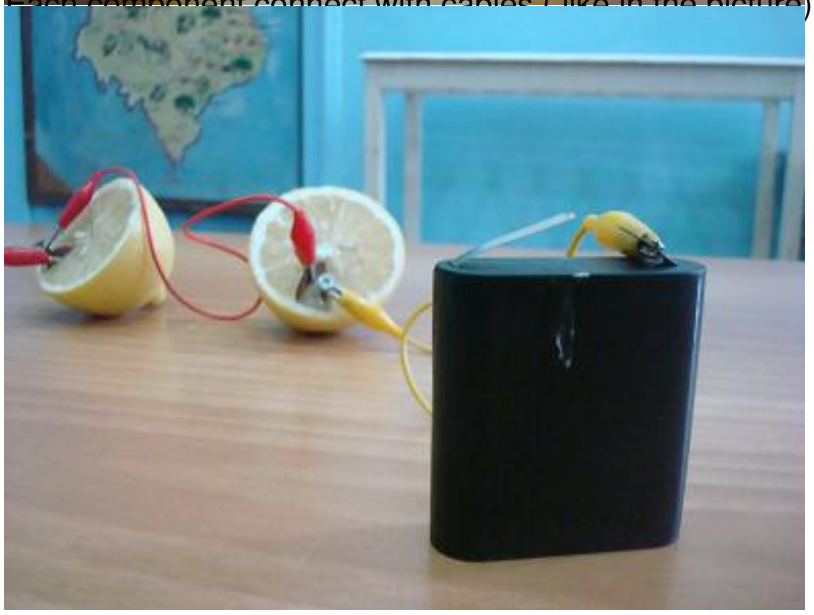


Place our fruit on a flat surface. Stick copper coin slightly obliquely, then on the other hand - nail.





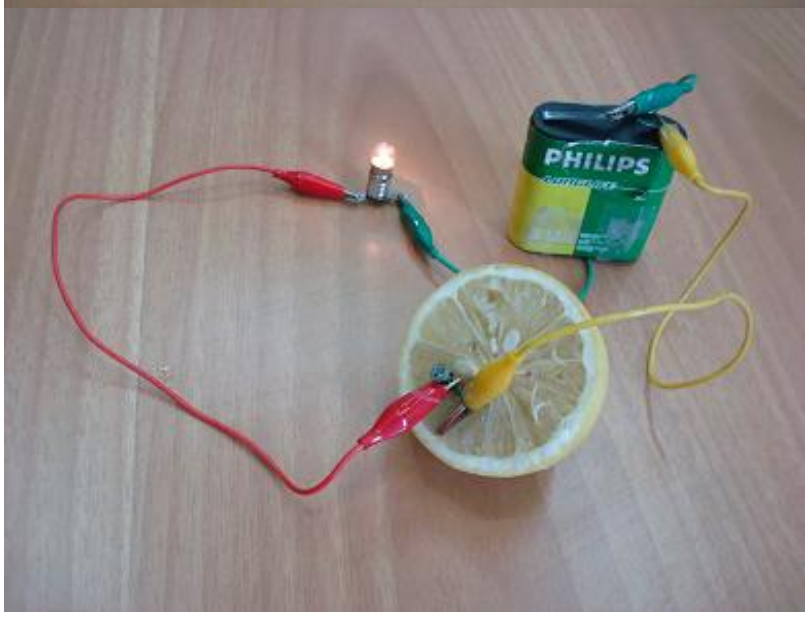
Each component connect with cables (like in the picture). Connect the battery to the circuit.





In the end combine all with the bulb. Now it starts to light.

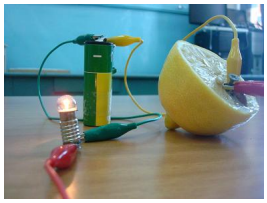




Explanation:



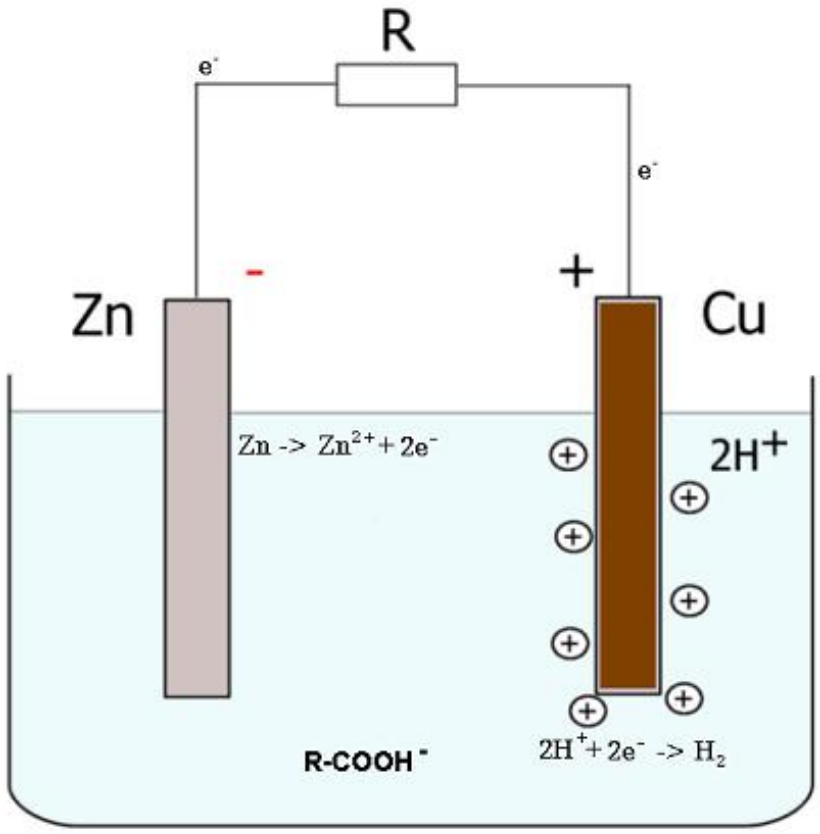
The lemon citric acid is dissociated into a cation H(+), and acid radical anion, which for the citric acid in the simplest terms can be written as R-COO-. Zinc nail reacts with acid (zinc is oxidized), and the solution enters the zinc cation Zn2+. In this reaction two electrons flowing in the circuit to induce an electric current to flow.



Copper electrode does not react with the solution on it but there is another important reduction reaction. Here, the electrons meet with cations and hydrogen reduction reaction is the hydrogen gas H2.

If we put to the lemon copper and zinc nails and don't close the circuit, only plate made of zinc will react with the acid. Summary following equation:

2Zn + 2 R-COOH -> 2(R-COO)- + H2 + 2Zn



With the separation of the reaction into two half-reactions was able to force the flow of electrons out of the solution.