

Lab #7 Electrophoresis

Experiment #1

Paper Chromatography

Filter paper

Printer paper

Coffee filters

Paper towel



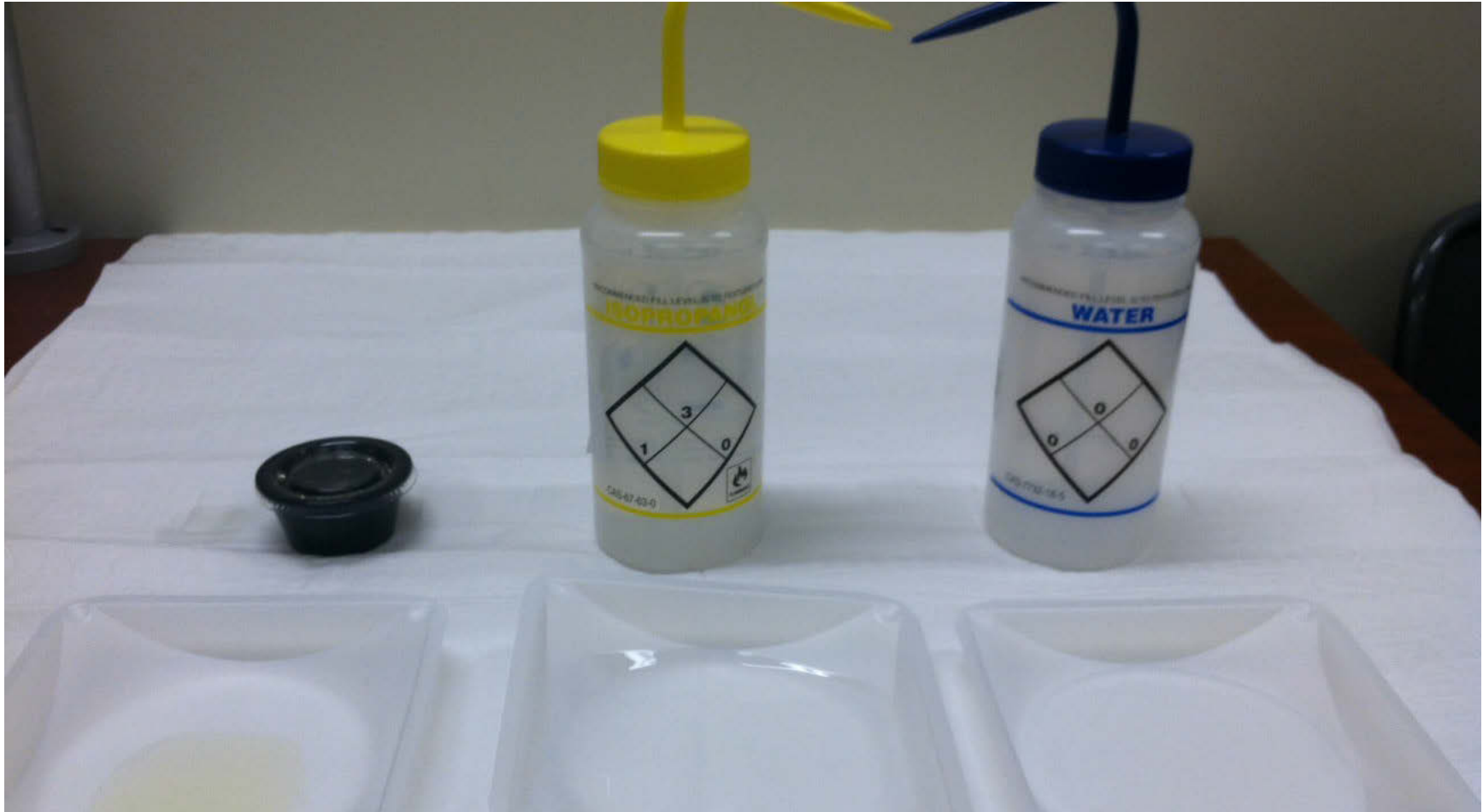
You are given four types of paper. Cut them up with scissors.

Paper Chromatography

Oil

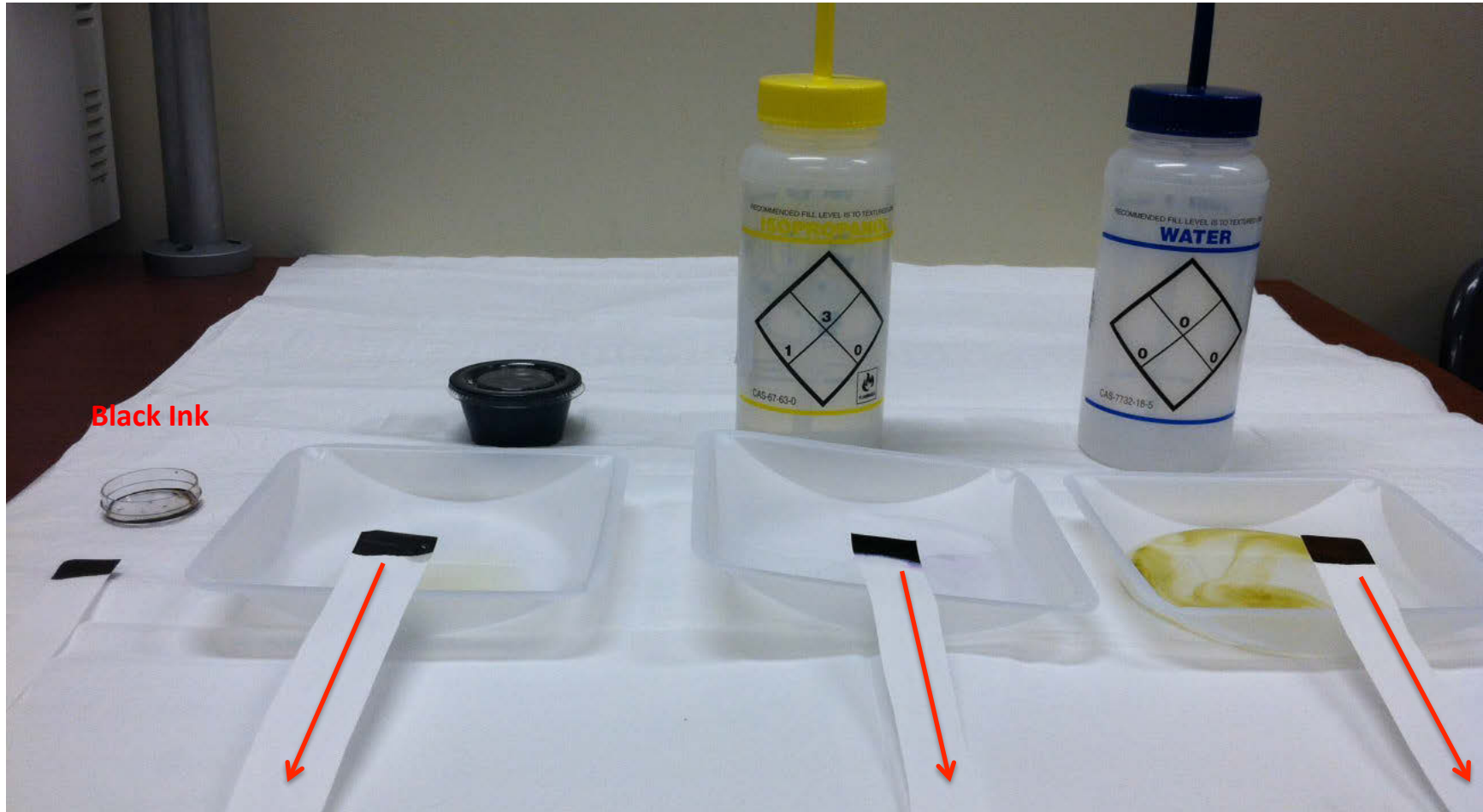
Alcohol

water



You are given three types of solvents. Pour them into weighing dishes.

Paper Chromatography

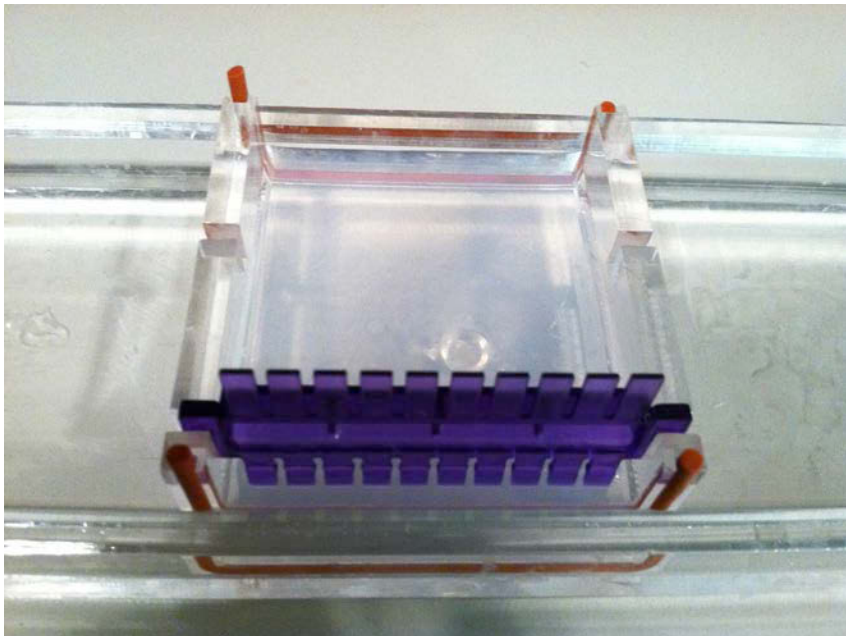


Dip the paper strips into black ink. Use capillary action to separate the color.

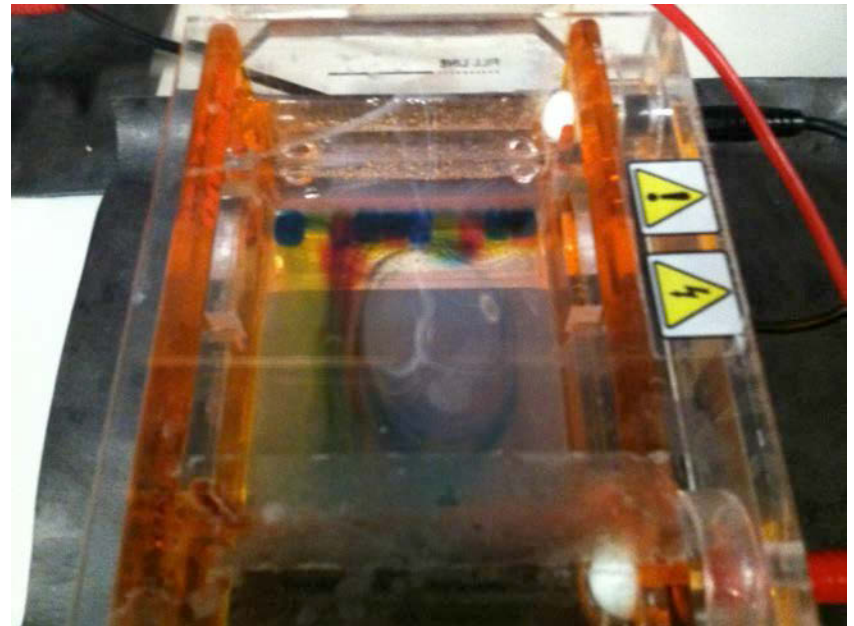
Experiment #2

Electrophoresis Setup

Agarose Gel



Electrophoresis Apparatus



A commercial electrophoresis setup is about 600 dollars.

Electrophoresis Result

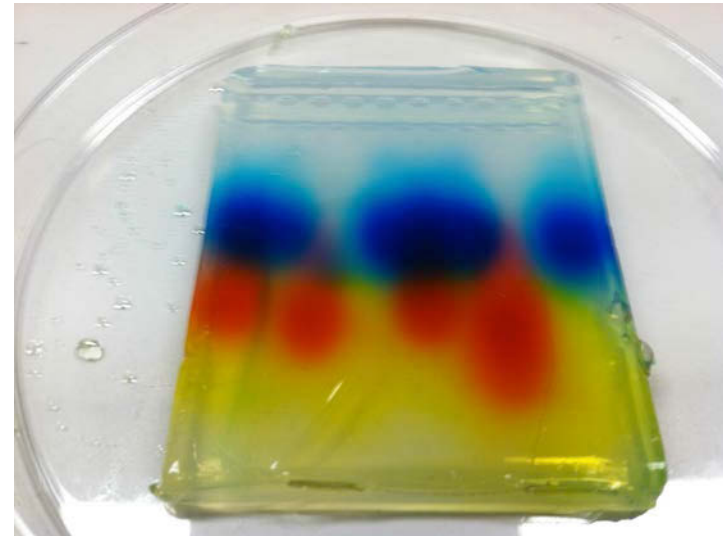
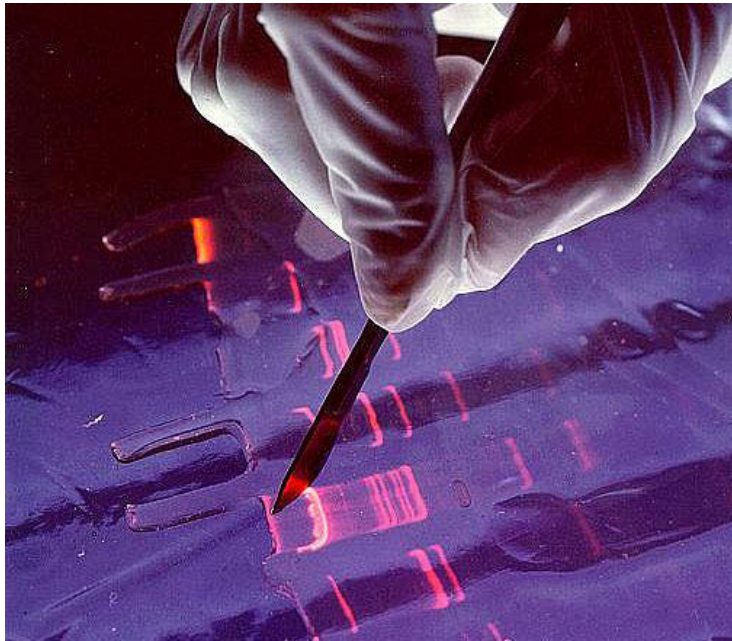
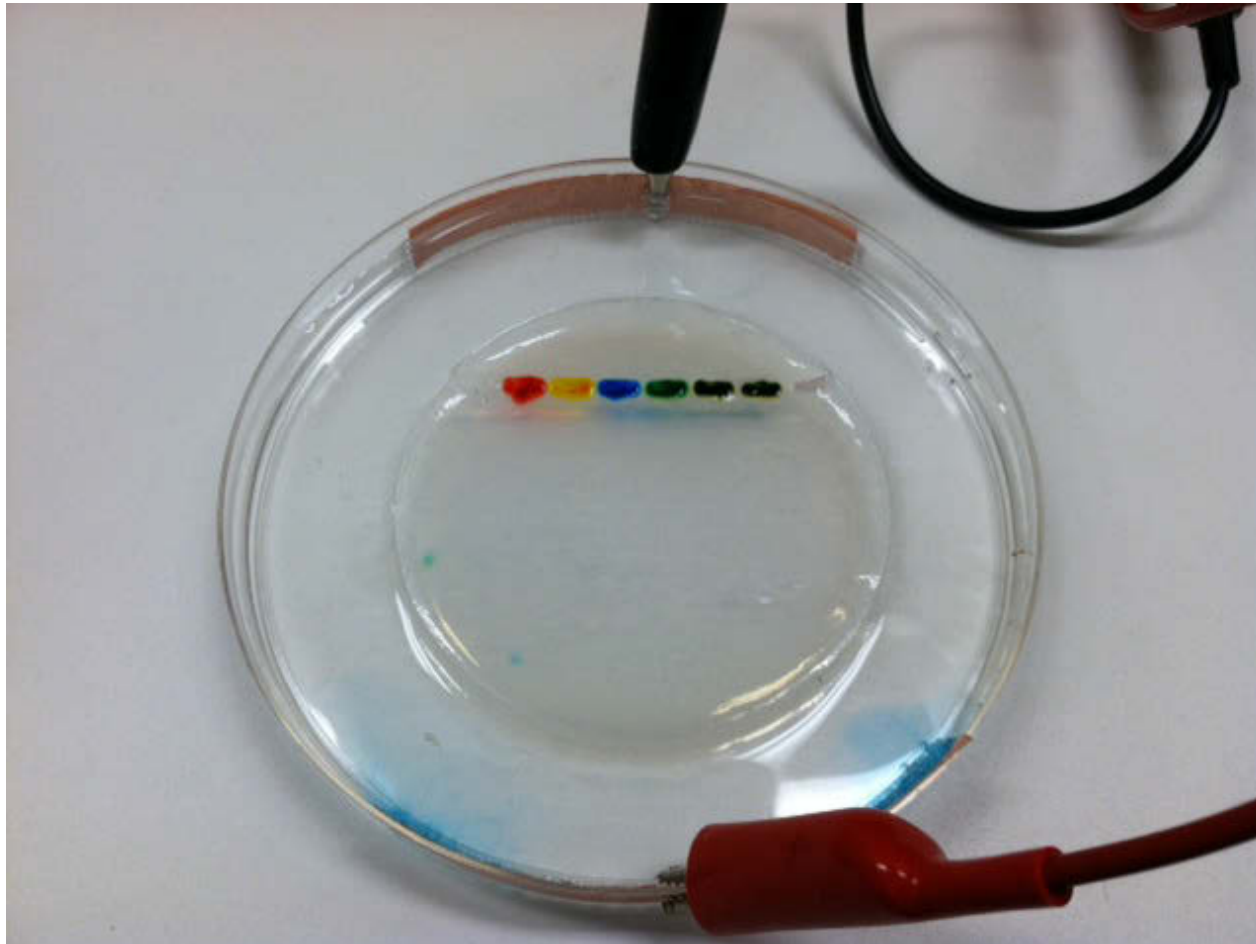


Photo courtesy of [PNNL - Pacific Northwest National Laboratory](#) on Wikimedia Commons.

You can use it for DNA tests or color separation.

Build Your Electrophoresis Setup (< \$5)



You are going to build your own electrophoresis apparatus for less than 5 dollars.



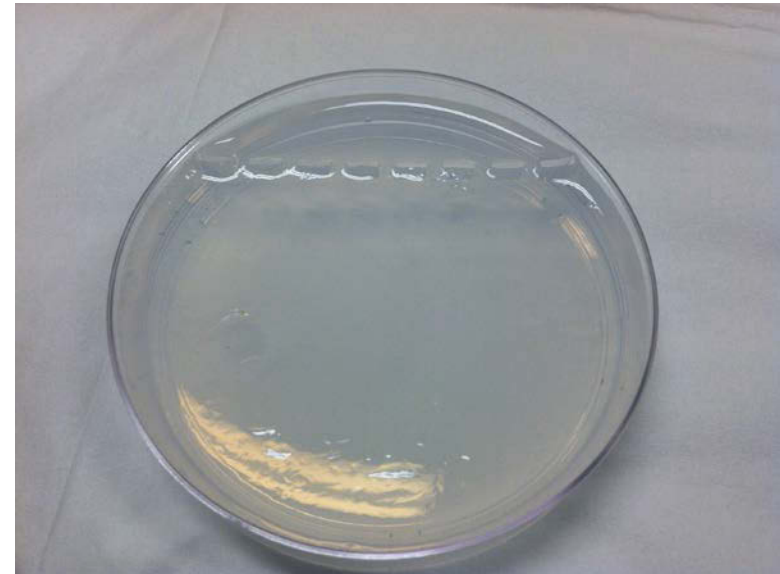
Gel: Mix 1 g of Agarose with 100 mL of water.



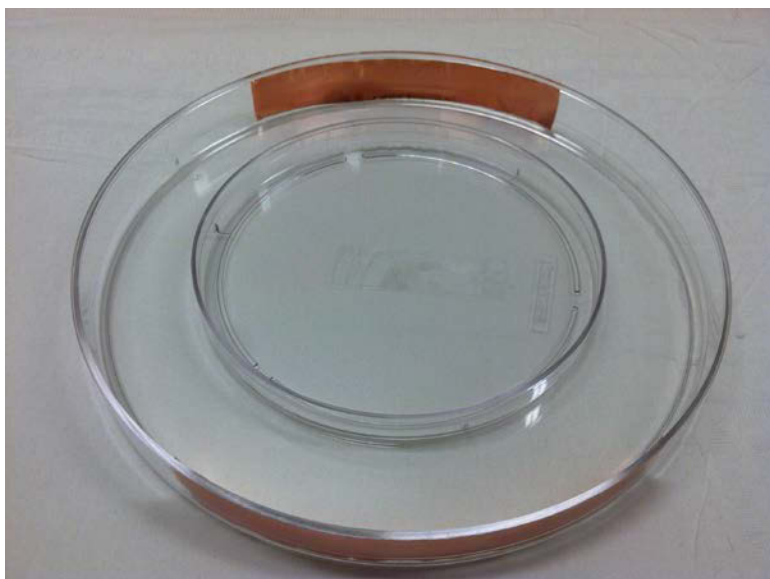
Heat it up with a microwave for 60 sec. It should start bubbling.



Pour the gel into a medium size petri dish (10 cm in diameter) and place a comb into it on one end. You should have at least 5 wells.



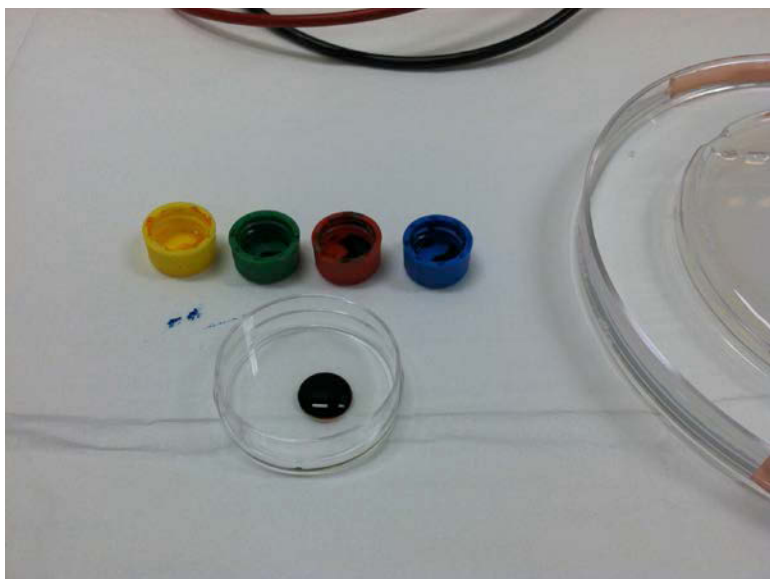
Let the gel cool and solidify.



Use double-sided tape to stick the medium petri dish cover onto the center of a large petri dish (15 cm in diameter). Use two strips of copper tape as electrodes.



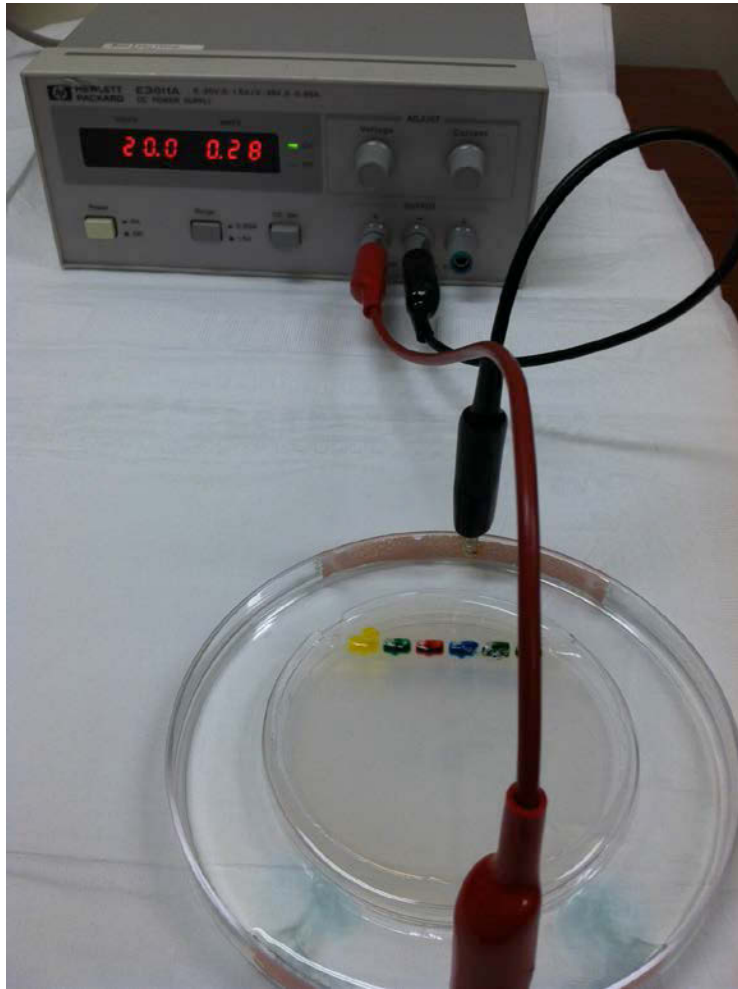
Mix water with baking soda. Use it as buffer.



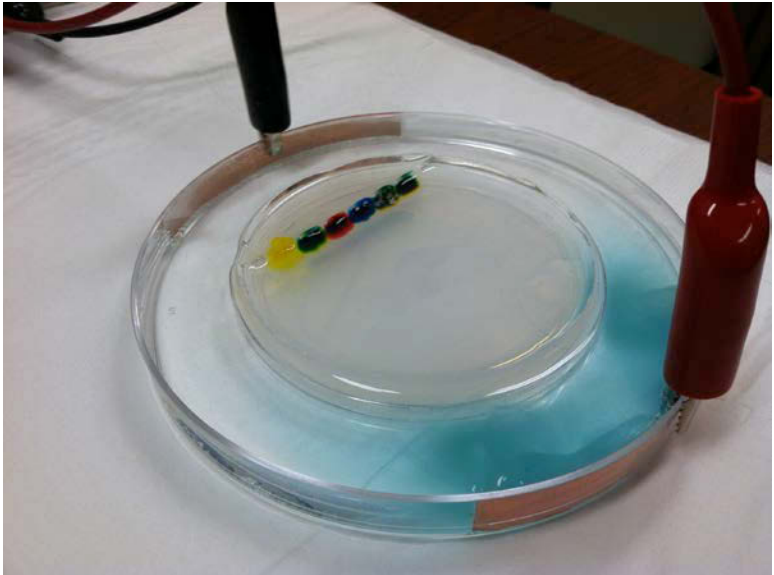
Mix food coloring into color black



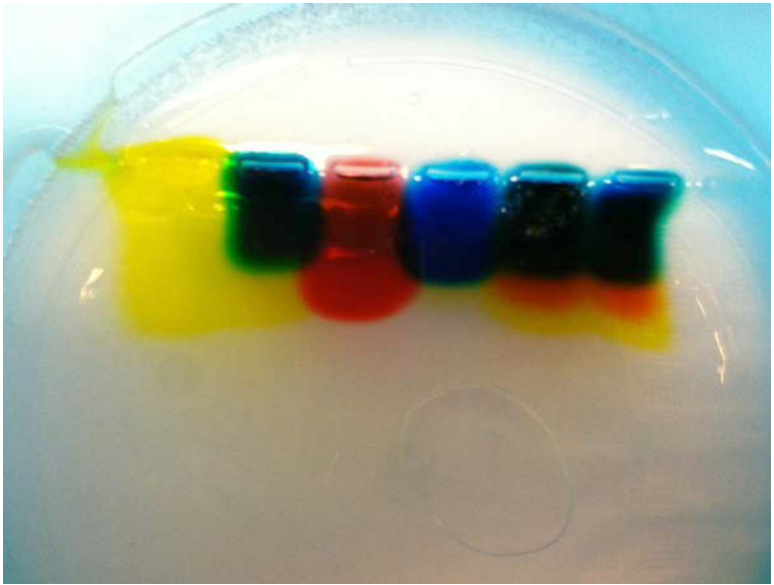
Use pipet tip to load your sample into the well of the gel.



Connect your setup with power supply or batteries.



You will start seeing bubbles near the electrodes.



After 30-60 mins, you can see color separation.

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6.S079 Nanomaker
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