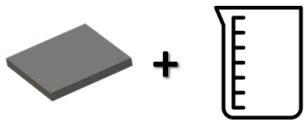


# Engineering Experiment Protocol-Final

## Methods: I. Paper making

3.6g paper pH6 1200 ml water



3.5 min

Add Enzymes

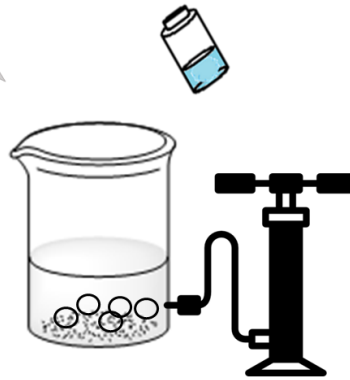


60 °C 1 hr

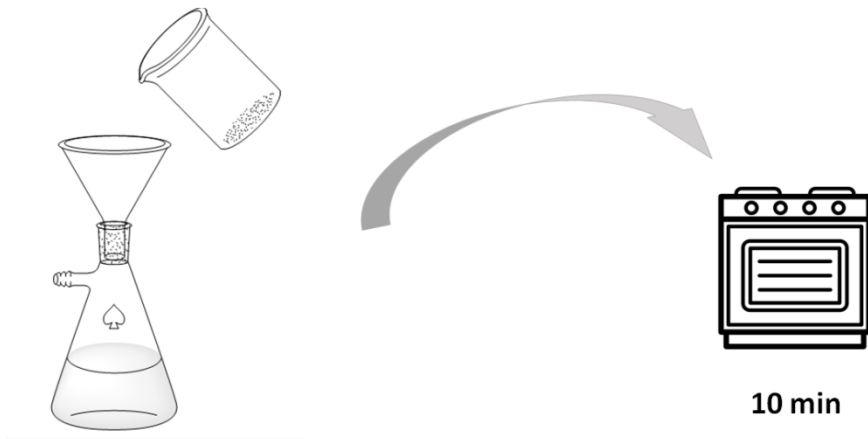
1.8 ml NaOH



0.3 ml detergent per 5 min



Flotation 20 min

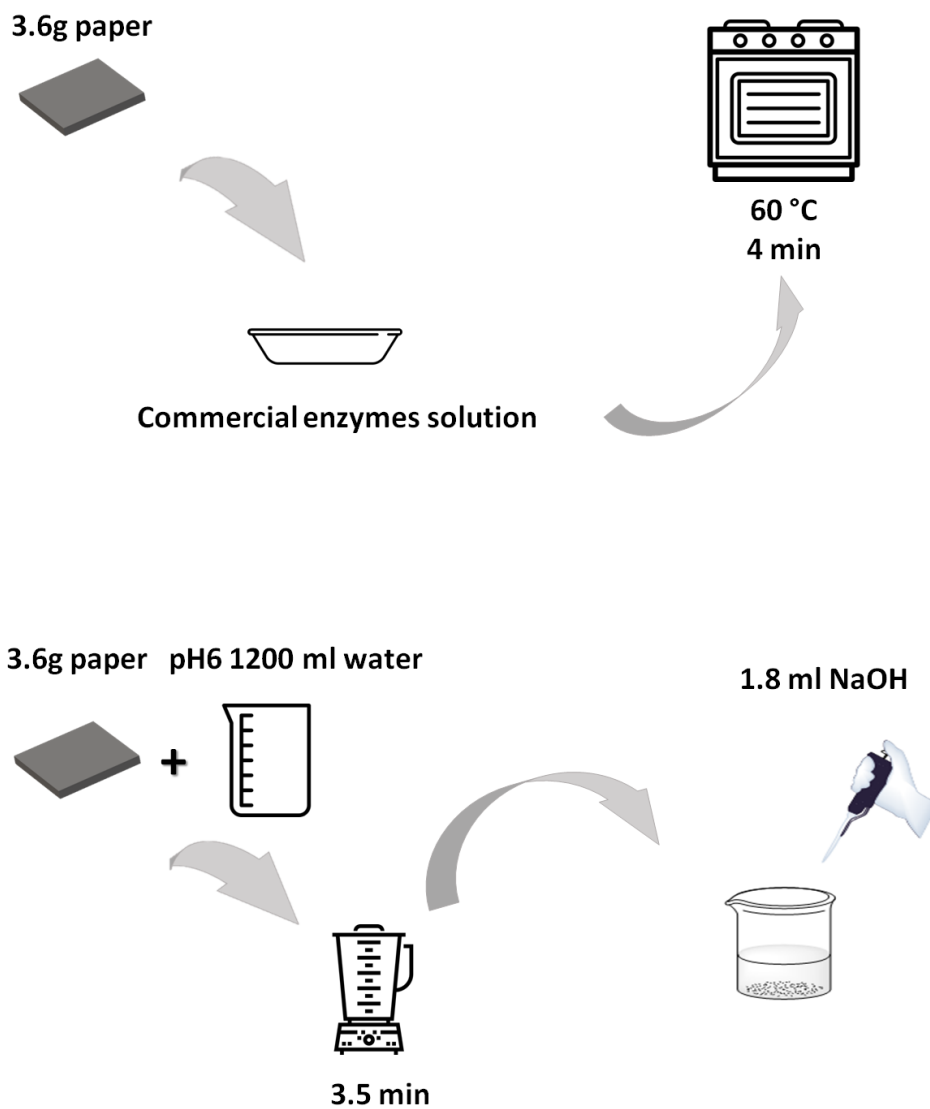


1. Blend 3.6 g paper with 1200 ml water in pH6.0 to make paper pulp.
2. Separate in two 600 ml beakers and heat the pulp up to 60°C .
3. Add the enzyme and react in 60°C for 60 minutes.
4. Add 1.8 ml NaOH and cool it down to stop the enzyme reaction.
5. Float the pulp for 20 minutes in which add 0.3 ml detergent every 5 minutes.
6. Prepare the vacuum device with filter paper and iron net on Büchner funnel.
7. Pour the pulp into the funnel which is set on a vacuum flask with a tube connecting to vacuum system

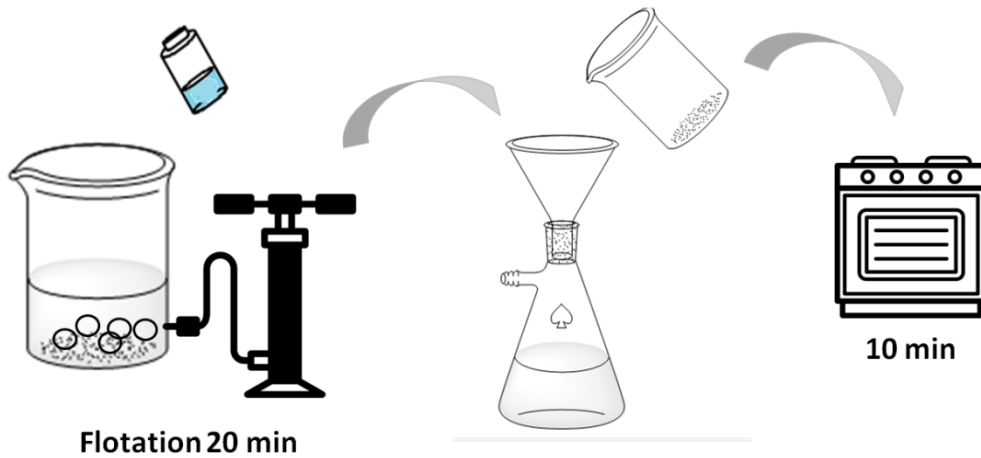
to drain the water.

8. Put the semi-finished paper into the oven to dry for about 10 minutes.

## Methods: II. Process of our device



0.3 ml detergent per 5 min



1. Blend 3.6g paper and dip it with commercial enzymes solution.
2. Put the paper in  $60^{\circ}\text{C}$  of oven for 4 minutes.
3. Blend 3.6 g paper with 1200 ml water in pH6.0 to make paper pulp.
4. Add 1.8 ml NaOH and cool it down to stop the enzyme reaction.
5. Float the pulp for 20 minutes in which add 0.3 ml detergent every 5 minutes.
6. Prepare the vacuum device with filter paper and iron net on Büchner funnel.
7. Pour the pulp into the funnel which is set on a vacuum flask with a tube connecting to vacuum

system to drain the water.

8. Put the semi-finished paper into the oven to dry for about 10 minutes.