Purifying Water with 'Waste'

Experiments:

Preparation of Activated Carbon from Food Waste

Activation

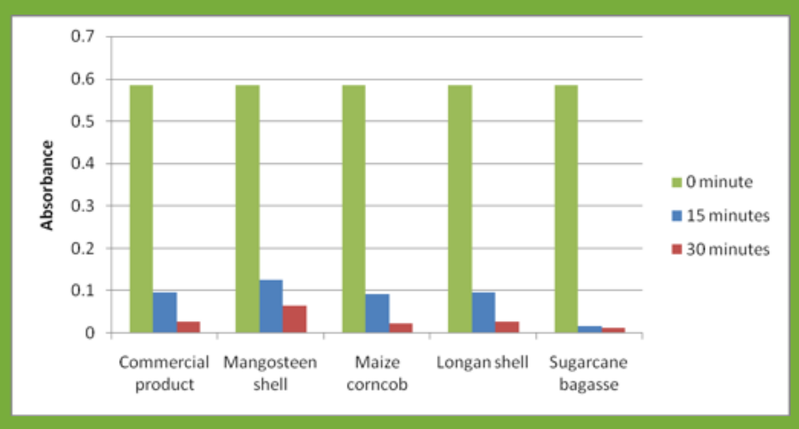
(I) By $CaCl_2$
(II) By K_2CO_3

Analysis of Adsorptivity for Methylene Blue

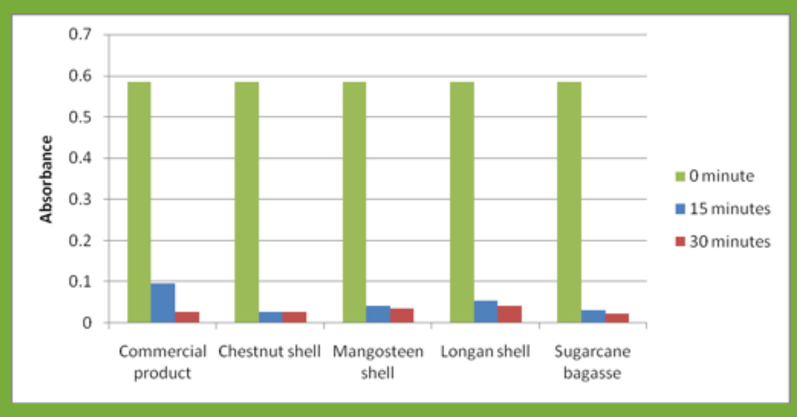
Analysis of Adsorptivity for Chlorinated Compounds

Results and Findings

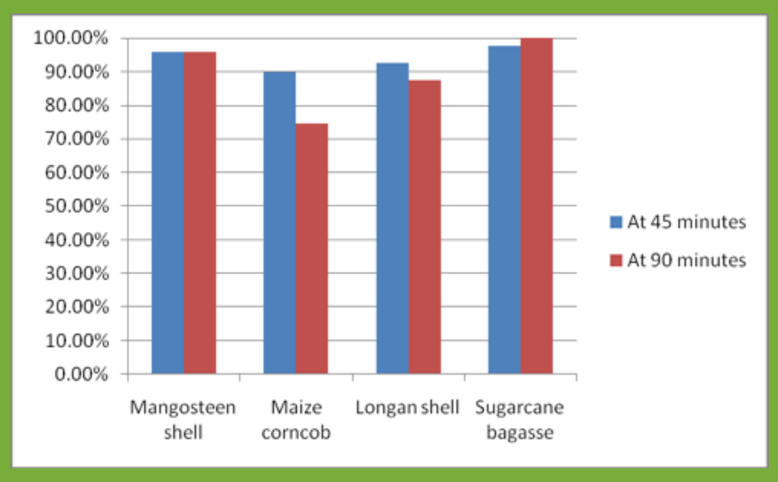
Absorbance of 5 ppm methylene blue solution treated with *$CaCl_2$-activated* carbon samples (method I) at 680nm



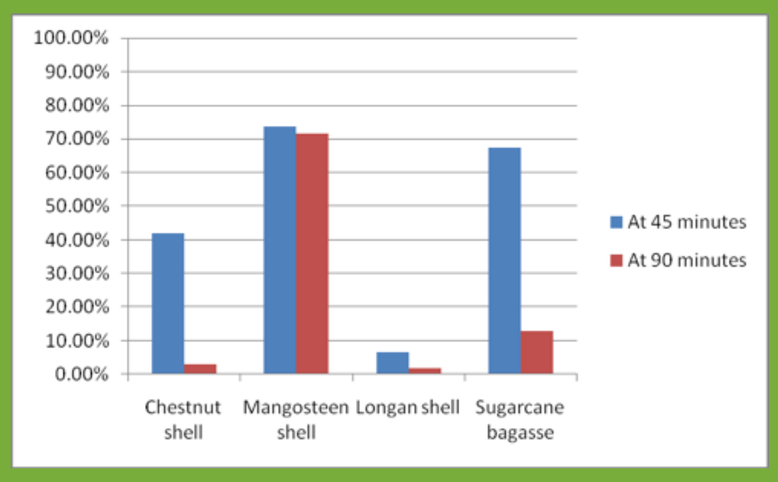
Absorbance of 5 ppm methylene blue solution treated with *K_2CO_3-activated* carbon samples (method II) at 680nm



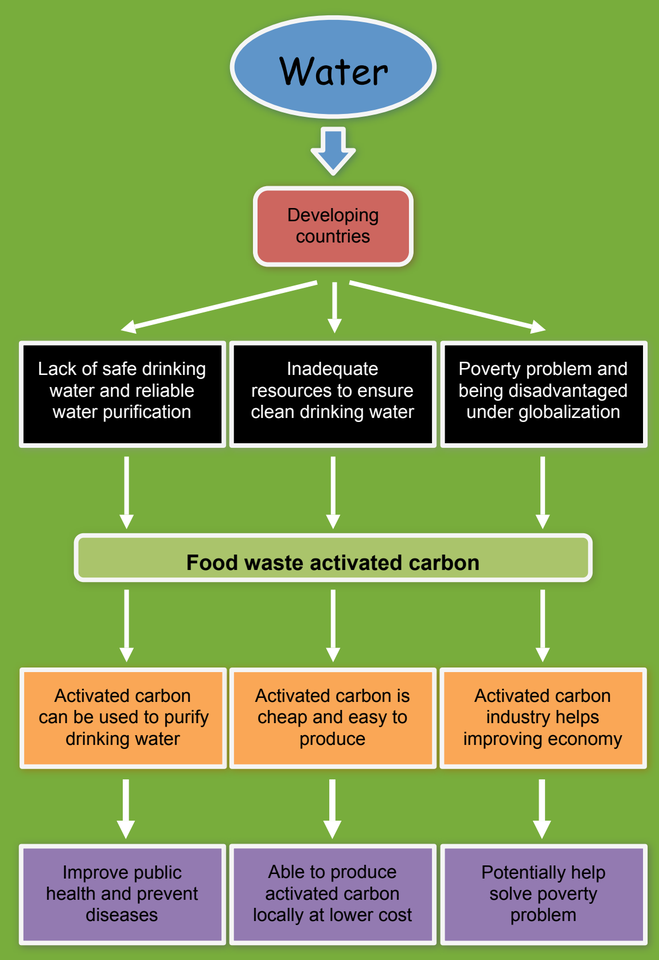
Percentage of residual chlorinated compounds in solution after treated with *$CaCl_2$-activated* carbon samples (method I)



Percentage of residual chlorinated compounds in solution after treated with *K_2CO_3-activated* carbon samples (method II)



Applications



Suggestions

- The adsorptivity of the activated carbon samples for toxic chemicals should be further investigated.
- The source of food waste used for the preparation and the optimum conditions for the activation should be further studied.
- The method of producing activated carbon from Longan and Chestnut shell could be optimized for large-scale industrial production.