Bricks and other clay materials suffer from their major characteristic which is porosity. The intricate network of micro channels in bricks allows water adsorption providing a favourable ground for fungi growth and cracks leading to mechanical failure of the material. The objectives of this project are to prepare chitosan with higher degree of deacetylation, to study on cross-linking of chitosan and lastly to apply coating on bricks using cross linked chitosan and run permeability test. The prawn shells were taken from local fish market and undergo four main process which are demineralization, deproteinization, decolorization and lastly deacetylation where will obtained as the final product chitosan. This chitosan will be then dissolved in 1% of acetic acid and produced 1.5wt%, 2.5 wt% and 3.5wt% of chitosan solution. This solution will be spread on the local brick and allow to undergo cross-linking process by using 1% of sodium citrate, sodium sulphate and sodium tri-polypophosphate. The sodium citrate gave the best hydrophobic characteristic. It is recommended to use the waste biomass which is prawn shell as the cost can be reduced. It also can reduce the amount of the biomass waste as it can be recycled into a beneficial things that can become a hydrophobic film coating.

### References
