Waraporn Srijew 2013: Dephosphorization in Wastewater by Chitosan from Shrimp Shell and Commercial Chitosan. Master of Science (Environmental Science), Major Field: Environmental Science, Department of Environment Science. Thesis Advisor: Associate Professor Kanita Tungkananuruk, M.Sc. 67 pages.

The aim of this research was to investigate the possible use of chitosan that was prepared from shrimp shell waste to remove of phosphorus contained in domestic wastewater. A batch experiment was conducted and the influence of pH (6-9), shaking rate (0-200 rpm.), shaking time (10-120 min.), contact time (0-120 min.), concentration of phosphate standard solution (5-30 mg/l) and chitosan dosage (0.125-2 g.) on phosphate removal were investigated. Maximum removal in 10 mg/L of the PO_4^{3-}-P solution by prepared chitosan and commercial chitosan were achieved at pH 4, shaking rate 150 rpm, shaking time 90 min and contact time 30 min.The phosphorus removal by prepared chitosan and commercial chitosan decreased from 54.94 % to 26.17 % and 44.55 % to 39.27 % when the wastewater was changed from the PO_4^{3-}-P solution to domestic wastewater had the other pollutant. That could be interfered the phosphorus removal process of chitosan. In addition, the removal of phosphorus in 20 L. of Phetchaburi municipality domestic wastewater was carried out under the optimum condition from batch experiment. It was found that 44.87 %and 38.26 % of phosphorus was removed by prepared chitosan and commercial chitosan respectively, more over the other pollutant such as turbidity, TDS, COD and BOD were removed too.

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