

STUDY OF NICKEL(II) ION ADSORPTION IN SOLUTION USING POWDERED *KUPANG* SHELL-CROSSLINKED CHITOSAN COMPOSITE

Abstract

The composite pellet of powdered *kupang* shell-crosslinked chitosan is prepared from the mixture of powdered *kupang* shell and 1% chitosan solution in 2% acetic acid solution crosslinked with 0,2% glutaraldehyde solution. The adsorption process of Ni(II) ion in solution is done by batch system. This research is done in various pH condition and time to determine the maximum adsorption capacity. Based on the analysis result it is shown that pH 4,0 and 90 minutes time are the optimum conditions. The suitable isotherm for the composite adsorption capacity of powdered *kupang* shell-crosslinked chitosan is Langmuir isotherm. The adsorbent composition influences the maximum adsorption capacity (q_{max}) and adsorption rate (K_L). The higher powdered *kupang* shell content in the composite can decrease the adsorption capacity but increase the adsorption rate.

Key word : Adsorption, biosorbent, Ni(II) ion, *kupang* shell, Langmuir isotherm.