

Synthesis of Mg/Al hydrotalcite-like from brine water and its application for methyl orange removal : a preliminary study

Eddy Heraldly, author

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Abstrak

ABSTRACT

The objective of this research is to synthesis of Mg/Al hydrotalcite-like (Mg/Al HTlc) from brine water and its application as a methyl orange (MO) removal. The research initiated with the synthesis of Mg/Al HTlc from brine water, which is well known as the desalination process wastewater. Characterization of the Mg/Al HTlc synthesized was confirmed through X-ray Diffraction and FT-IR Spectroscopy. The determination of optimum acidity, adsorption rate, and energy and capacity adsorption were studied. The result showed that pH 4 was the optimum acidity for the adsorption of MO on Mg/Al HTlc. MO was adsorbed at pseudo-second order adsorption rate of $1.03 \times 10^5 \text{ g mol}^{-1} \text{ min}^{-1}$ on the Mg/Al HTlc. The adsorption data fitted well into the linearly transformed Freundlich equation.