พิมพ์ต้นฉบับบทคัดย่อวิทยานิพนธ์ภายในกรอบสีเขียวนี้เพียงแผ่นเดียว

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ATAPHOL KANOKRATTANA : EFFECT OF CHEMICAL CONDITIONING ON SPECIFIC RESISTANCE OF ALUM SLUDGE FILTRATION FROM WATER TREATMENT PLANTS.
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This research was conducted to investigate the effect of chemical conditioning on specific resistance of alum sludge filtration from water treatment plants when anionic polyelectrolyte , cationic polyelectrolyte and nonionic polyelectrolyte were used for conditioning alum sludge concentration of 2 %,4 % and 6 % of total solid contents. Alum sludge was taken from a sedimentation tank of Bang Khen water treatment plant. Lime was used for adjusting pH of alum sludge from 7 to 11. Then it was tested by Buchner Funnel Test to find the values of specific resistance and total solid content and choose the lowest specific resistance and chemical cost as the best condition.

It was found that the optimum pH for alum sludge conditioning was 9.0 in the case of using anionic polyelectrolyte at the dose of 0.03% dry solid of raw sludge for alum sludge concentration of 4 % of total solid content. The lowest specific resistance was equal to 8.51×10^{11} m./kg. Net sludge solids yield was 19.03 kg./$m.^2$-hr. Chemical cost for conditioning 1 $m.^3$ of alum sludge was 3.14 baht. In the case of using cationic polyelectrolyte and nonionic polyelectrolyte at pH 7.0, the lowest specific resistances were equal to 1.09×10^{12} and 9.18×10^{11} m./kg. for alum sludge concentration of 4 % and 6 % of total solid content respectively. Chemical costs for sludge conditioning were 12.04 and 16.54 baht respectively.

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