

ABSTRACT

In this study, adsorbent synthesis was carried out using silica from lemongrass ash. The results of the silica extraction are then mixed with Al_2O_3 , NaOH, and H_2O to be synthesized into adsorbents. The resulting sample was characterized for crystallinity and bonding using XRD and FT-IR. The lemongrass, which had been calcinated at $600^\circ C$ within 3 hours, were subsequently mixed with 0.6 grams of SiO_2 , 0.13 grams of Al_2O_3 , 6.75 grams of H_2O and 0.97 grams of NaOH, as well as was incubated for 1 hour, has the highest specific adsorbitivity of 2583 mg / g. The results of XRD and FT-IR analysis showed that the adsorbent did not have sufficient zeolite material characteristics. However, its ability to reduce the salinity of seawater is far exceeded the ability of activated natural zeolites.

Keywords: *zeolite synthesis, lemongrass, silica, Al_2O_3 , sol-gel, hydrothermal*