

## Abstract

Research Title : PREPARATION OF PURE SILICA FROM RICE HUSK AND USING  
AS A SILICA SOURCE FOR SYNTHESIS OF ZEOLITE  
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The goal of this work was preparation of pure silica from rice husk by extraction with 3 M hydrochloric acid and calcination at 500°C. The rice husk silica was used as a silica source for preparation sodium silicate solution that used to synthesize zeolite type X (LSX). The gel with mole ratio of 5.5 Na<sub>2</sub>O : 1.65 K<sub>2</sub>O : Al<sub>2</sub>O<sub>3</sub> : 2.2 SiO<sub>2</sub> : 122 H<sub>2</sub>O was prepared and poured in difference container (Polypropylene and Teflon-lined autoclave). Then the gel was crystallized at 100°C, filtrated and washed until pH 10. Characterizations by X-ray diffraction (XRD), X-ray fluorescence spectrometry (XRF), scanning electron microscopy (SEM), N<sub>2</sub> adsorption-desorption analysis BET surface area and Fourier transform infrared spectroscopy (FT-IR). The results showed the crystallized zeolite in Teflon-lined autoclave has 102.88 nm of crystal size, multi-faceted spherulite crystals and 286 m<sup>2</sup>/g of surface area.