Thesis Title	Preparation and Purification of Barium Compounds from Barite by Fluidization Technique
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ABSTRACT

The preparation of barium compounds in this research work were made from a white color grade barite ore which is composed of 89.91 % $BaSO_4$, 2.25 % $SrSO_4$, 0.42 % Fe_2O_3 4.74 % CaO, 0.02 % MgO, 0.22 % Al_2O_3 and 0.12 % SiO_2. It has a moisture content of 0.07 $\pm$ 0.01 %, specific gravity of 4.136 $\pm$ 0.002 and the ignition loss 0.16 $\pm$ 0.01 %. The experiments were carried out at the optimum conditions, i.e, mesh size of the ore, the weight ratios of the ore and each of its reactant, e.g. Na_2CO_3, wood charcoal, coke and lignite, as well as the temperature and heating time. It was found that more than 90 % of $BaSO_4$ in the ore was converted by heating with Na_2CO_3 : 86 %, 90.21 % and 55.64 % conversions were obtained by heating with wood charcoal, coke, and lignite respectively. However, 72.54 % of $BaSO_4$ in the ore was converted to black ash by heating with wood charcoal in fluidization process. The solutions of the products obtained from the process were used as a starting material for the preparation of barium compounds, including an industrial pigment, lithopone, was also prepared.