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Proses sintesis y-alumina dari Bauksit Indonesia menggunakan jalur Gibbsite-Boehmite-y-Alumina

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Abstrak

y-alumina (AL2O3) is one of catalyst support widely used in cotalytic process. From technological aspect, producing y-alumina bauxite is not a new technology, moreover, Indonesian bauxite reserves as its raw material is huge. This research consists of bauxite digestion using Bayer method gibbsite precipitation using neutralization of sodium aluminate by C01 method hydrothermal process for transforming gibbsite to boehmite, and boehmite calcination to produce y-alumina. The result shows the total extraction percentage of 7'-alumina is 51.52 %. The XRD characterization which is also supported by FTIR characterization shows that precipitation product is bayerite, hydrothermal process has transformed bayerite to boehmite, and calcination product is y-alumina. The surface area of y-alumina produced at calcination temperature 550, 675, and 800 are 52, 43, and 43 m2/g, respectively. SEM characterieation indicates fibrous shape of boehmite morphology. The XRF characterization shows impurities found in bayerite and boehmite are Fe, Si, Ti, and S.