

## Proses sintesis $\gamma$ -alumina dari Bauksit Indonesia menggunakan jalur Gibbsite-Boehmite- $\gamma$ -Alumina

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20305786&lokasi=lokal>

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### Abstrak

*$\gamma$ -alumina ( $Al_2O_3$ ) is one of catalyst support widely used in catalytic process. From technological aspect, producing  $\gamma$ -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 CO<sub>1</sub> method hydrothermal process for transforming gibbsite to boehmite, and boehmite calcination to produce  $\gamma$ -alumina. The result shows the total extraction percentage of  $\gamma$ -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  $\gamma$ -alumina. The surface area of  $\gamma$ -alumina produced at calcination temperature 550, 675, and 800 are 52, 43, and 43 m<sup>2</sup>/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.*