

Manuscript ID : 00001-86629

Source ID : 00000627

INTERNATIONAL JOURNAL OF PETROCHEMICAL ENGINEERING AND TECHNOLOGY

Volume 1, Issue 1, January-June 2020, Pages 5-10, Page Count - 6



## SYNTHESIS NANO ALUMINA

Vetriselvi E <sup>(1)</sup> Karunakaran S <sup>(2)\*</sup> Kanagaraj.N <sup>(3)</sup> Ragul.M <sup>(4)</sup> Rajeshwaran.S <sup>(5)</sup> Ebin Benny <sup>(6)</sup>

<sup>(1)</sup> Assistant Professor, Department of Petrochemical Engineering, RVS College of Engineering and Technology, Coimbatore, Tamil Nadu, India.

<sup>(2)</sup> Professor & Head, Department of Petrochemical Engineering, RVS College of Engineering and Technology, Coimbatore, Tamil Nadu, India.

<sup>(3)</sup> Student, Department of Petrochemical Engineering, RVS College of Engineering and Technology, Coimbatore, Tamil Nadu, India.

<sup>(4)</sup> Student, Department of Petrochemical Engineering, RVS College of Engineering and Technology, Coimbatore, Tamil Nadu, India.

<sup>(5)</sup> Student, Department of Petrochemical Engineering, RVS College of Engineering and Technology, Coimbatore, Tamil Nadu, India.

<sup>(6)</sup> Student, Department of Petrochemical Engineering, RVS College of Engineering and Technology, Coimbatore, Tamil Nadu, India.

### Abstract

*The Nano alumina have been synthesized employing a novel eco-friendly route from natural bauxite ore. The synthesis of alumina powder from natural bauxite is of great interest owing to the fact that it enables mass production without the use of expensive chemical resources and processing techniques. Employing the Bayer process, synthesis of Nano alumina has been made from natural bauxite followed by sol-gel route. The ultrafine alumina powder with high surface area is obtained through the digestion of gel followed by sintering. The size of the particle and its morphology was controlled by calcination temperature and processing time. The crystallite size of the Nano alumina powder has been measured using XRD pattern and the FTIR spectrum of Nano powder after calcination at different temperatures (873 K) were measured. The results from the energy dispersive X-ray analysis (EDAX) and morphological studies reveal interesting information. The observed results indicate that one can control the particle size by controlling the aging and calcination temperature. The obtained results indicate that the above process technique is an unique method for the preparation of Nano alumina (Al<sub>2</sub>O<sub>3</sub>) from natural source such as bauxite.*

### Author Keywords

Nano Alumina, Precipitation, sol-gel method, XRD, FTIR, EDAX

### ISSN Print:

Source Type: Journals

Publication Language: English

Abbreviated Journal Title: IJPET

Publisher Name: IAEME Publisher

Major Subject: Physical Sciences

Subject area: Mechanics of Materials

### ISSN Online:

Document Type: Journal Article

DOI:

Access Type: Open Access

Resource Licence: CC BY-NC

Subject Area classification: Engineering and Technology

Source: SCOPEDATABASE

### Reference