Faculty of Applied Sciences
Universiti Teknologi MARA

FACILE SYNTHESIS OF NiCo SUPPORTED SILICA RICE HUSK CATALYST

CHE ANISHA BINTI CHE RASIKIN

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This Final Year Project Report entitled "Facile Synthesis of NiCo Supported Silica Rice Husk Catalyst" was submitted by Che Anisha Binti Che Rasikin in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Applied Chemistry, in the Faculty of Applied Sciences, and was approved by

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Dr. Jeyashelly Andas
Supervisor
B. Sc. (Hons.) Applied Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
02600 Arau
Perlis

_____

Dr. Siti Nurlia Ali
Project Coordinator
B. Sc. (Hons.) Applied Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
02600 Arau
Perlis

_____

Dr. Nur Nasulhah Kasim
Head Programme
B. Sc. (Hons.) Applied Chemistry
Faculty of Applied Sciences
Universiti Teknologi MARA
02600 Arau
Perlis

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ABSTRACT

FACILE SYNTHESIS OF NiCo SUPPORTED SILICA RICE HUSK CATALYST

The research project aims to develop an environmentally friendly method for synthesizing NiCo using rice husk-derived silica. The research project aims to develop NiCo that can be prepared using the sol-gel method. However, the sol-gel method for producing NiCo catalysts faces challenges like agglomeration at high temperatures and limiting catalytic activity. Fourier-Transform Infrared Spectroscopy (FTIR) and Scanning Electron Microscopy (SEM-EDX) will characterize the synthesized catalysts to determine composition, morphology, and structure. The shape of RH-NiCo particles showed that they did not stick together as much. FTIR showed how much SiO_2 was in RH-NiCo. It also showed that Ni-O and Co-O were stretching waves at a frequency of 665.01 cm^{-1} in RH-NiCo. Furthermore, the weight values of Ni in RH-Ni and RH-NiCo were 1.25 wt% and 1.12 wt%, respectively. RH-Co had 0.17 wt% and RH-NiCo had 0.56 wt%. This shows that silica has an impact on the concentration of nickel and cobalt in RH-NiCo. However, silica generally helps NiCo grow, which is why the properties of RH-NiCo were successfully confirmed.

TABLE OF CONTENTS