



**Faculty of Applied Sciences
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FACILE SYNTHESIS OF NiCo SUPPORTED SILICA RICE HUSK CATALYST

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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 SiO₂ 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.

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