



**PEMBUATAN NANOKATALIS $\text{Ni}_y\text{Co}_x\text{Fe}_{(2-x-y)}\text{O}_4$ SPINEL MELALUI
PEMANFAATAN LARUTAN PUTIH TELUR**

Rudy Situmeang, P. Manurung, Septhian Sulysthio, dan M. Sobari

Jurusan Kimia Fakultas MIPA Universitas Lampung
Jl. Sumantri Brojonegoro No 1 Gedong Meneng Bandar Lampung 35142
Surel: situmeang@yahoo.com

ABSTRACT

$\text{Ni}_y\text{Co}_x\text{Fe}_{(2-x-y)}\text{O}_4$ nanocatalysts (with $y = 0,2$ and $x = 0,1 - 0,3$) have been prepared using a mixture method of sol – gel and freeze - drying. Starting materials used are nitrate salts of iron, nickel and cobalt which are dissolved in white egg solution, respectively before mixing process. After calcining, the nanocatalysts are characterized by use of X-ray diffraction (XRD) analysis, Infra Red spectroscopy (IR), and Scanning Electron Microscopy (SEM). X-ray diffraction analysis proved that the prepared nanocatalysts consist of various crystalline phases but NiFe_2O_4 which is superimposed to CoFe_2O_4 is a major phase. FTIR Analysis proved that Lewis acid sites and Brønsted – Lowry acid sites are existed in all prepared nanocatalysts. Then, surface morphology analysis showed that $\text{Ni}_y\text{Co}_x\text{Fe}_{(2-x-y)}\text{O}_4$ nanocatalysts prepared have a relatively homogeneous form. Size of particles using SEM data and Debye – Scherer equation is nano, which is less than 100 nm, indeed.

Keywords : nanokatalis, sol-gel dan freeze-drying, situs asam Brønsted – Lowry dan Lewis.