ABSTRACT

AHMAD NUBAIL. Adsorption of Eosin Y using Silica Gel Composite modified by 3-aminopropyltriethoxysilane (APTES)–Activated Carbon from Natural Materials. Jakarta: Chemistry Program. Faculty of Mathematic and Natural Science. State University of Jakarta. 2018.

The Composite of silica gel modified by 3-aminopropyltrietoxysilane (APTES) – activated carbon from natural materials has been successfully synthesis through three major steps. First step is sol-gel process of natrium silicate from rice husk ash using NaOH and HCl solvents, continuing with the modification of APTES with toluene and etanol. Second step is synthesized the activated carbon from coconut shell through carbonization and $ZnCl_2$ solvent addition. Third step is mixing the silica gel APTES with activated carbon through homogenization process. The adsorption of eosin Y were examine with pH and contact time variables along with isotherm adsorption model. Composite were characterized using Fourier Transform Infrared (FTIR), *Scanning* Electron Microscopy–Electron Display X-Rays (SEM-EDX), Surface Area Analyzer (SAA), dan UltraViolet-Visible Spectroscopy (UV-Vis). The result of adsorption showed that the effect of initial pH and contact time were 4 and 30 minute, respectively. The adsorption isotherm model of eosin Y dye toward composite following the Langmuir model with the maximum adsorption capacity and Langmuir constant value are 21,28 mg g^{-1} and 0,165, respectively.

Keywords: Adsorption, Silica Gel, APTES, Rice Husk Ash, Coconut Shell, Eosin Y, Isotherm Adsorption