Noor, D. A. I., 2014. Synthesis of Ni(II)-naphtol blue black Complex Compound as Dye Sensitizer for Dye Sensitized Solar Cell (DSSC). This script below is supervised by Drs. Hamami, M.Si. and Harsasi Setyawati, S.Si., M.Si., Departement of Chemistry, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

The energy crisis especially of electrical energy is one of the seriously problem in the world so need an alternative of renewable energy that solar cells. The purpose of this research is to synthesize of Ni(II)-naphtol blue black complex compound as dye sensitizer at Dye Sensitized Solar Cell (DSSC). The synthesize of Ni(II)-naphtol blue black complex compound was performed by reacting $NiSO_4.7H_2O$ and *naphtol blue black* as a ligand with mol ratio 1:3. The result of complex compound in this research were characterized using spektrofotometer UV-Vis, spektrofotometer *Fourier Transform Infrared Spectroscopy* (FT-IR), magnetism test by *Magnetic Succeptibility Balance* (MSB), and conductometry test with conductometer. Ni(II)-naphtol blue black complex compound showing the MLCT phenomenon at maximum wavelength of 273 nm. Metal-ligand bounding showed by Ni-N vibration at 354, 9 cm^{-1} and Ni-O vibration at 486,06 cm^{-1}. Ni(II)-naphtol blue black complex compound are paramagnetic with magnet moment of 3,46 BM (Bohr Magneton) and consuctometry test showing that Ni(II)-naphtol blue black complex compound is ionic compound. Ni(II)-naphtol blue black complex compound can be used as dye sensitizer at DSSC with maximum current was 1,003 mA and maximum voltage was 0,0445 V with 9,23 % efficiency.

Keyword : Ni(II)-naphtol blue black, dye sensitizer, DSSC.