

SUMMARY

Andreas Setiarto Wibowo, Mechanical Engineering, Faculty of Engineering, Brawijaya University, January 2015, Effect of Heating Temperature and Concentration Palm Oil and Water to Hydrogen Production Speed, Supervisor: Prof. Ir. I.N.G Wardana, M.Eng.,Ph.D and Purnami ST., MT.

Increased mastery of space, time and materials demanding ever greater source of energy that is required. A high demand of energy without any sufficient production only causing crisis of energy. There needs to be a variety of ways to save energy or by looking for sources of renewable energy. Fuelcell is one of example a technology for renewable energy. Fuelcell technology increasing the need for hydrogen is also increasing, so it is necessary to do research on hydrogen production.

Steam reforming method is one of method to producing hydrogen. The purpose of my research is to analyze steam reforming method to produce hydrogen using water and palm oil mixture. The palm oil and water vaporized in different tubes, then their mixed vapor conducted using CuZn catalyst to hydrogen storage. There is H₂ gases sensor for measuring hydrogen gases concentration using ppm scale inside hydrogen storage. This research using water and palm oil mixture comparison variation 3:1, 2:1, 1:1, 1:2, and 1:3, for temperature using 170 °C, 200 °C, 230 °C .

The result from research and data analyze is: From most to less productive temperature to produce hydrogen is 230 °C, 200 °C and 170 °C. From most to less productive mixture of water and palm oil to produce hydrogen is (3:1), (2:1), (1:2), (1:3) and (1:1). From most to less efficient mixture of water and palm oil concentration is (1:2), (1:3), (1:1), (2:1) and (3:1).

Keywords : Palm Oil, Steam Reforming, Hydrogen

