

Analysis of the Use of Naoh, Koh and Ba(OH)₂ Catalyst Variations in the Production of Hho Gas (Hydrogen Hydrogen Oxygen) by a Wet Type Hho Generator. Commission Guide Faruq Avero Azhar, S.ST., M.Eng.

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ABSTRACT

Hydrogen gas is of great concern to developed countries in the world, because it is environmentally friendly and efficient energy, where the only emissions produced are water vapor. Hydrogen gas is an abundant element with a percentage of 70% of the total mass of natural elements, but it is not found freely in nature or cannot be mined like fossil fuels. Several ways to obtain hydrogen gas are through the Steam Methane Reforming, Petroleum Refining, Coal Gasification and Water Electrolysis processes (Nurlatifah and Arlianti, 2021). This research designs an Oxyhydrogen Generator (HHO) device that uses a wet type HHO Generator with variations in the use of Sodium Hydroxide (NaOH), Potassium Hydroxide (KOH) and Barium Hydroxide (Ba(OH)₂) catalysts. The catalyst fraction used was 4.76%. The water used is 1 liter of well water. The energy source of the power supply is the voltage and current provided in balance. The electrode material uses 304L Stainless Steel with a thickness of 1 mm with a size of 60 mm x 40 mm, 4 pieces each. The arrangement of the electrode plates must be in a predetermined order, namely consisting of 4 positive electrode plates and 4 negative electrode plates (P-N-P-N-P-N-P-N). In between the plates there is rubber with an inner diameter of 10 mm which aims to separate the positive electrode from the negative electrode of the HHO generator. The highest HHO gas production rate on the Ba(OH)₂ catalyst at 180 seconds was 0.000583 L/s, for the NaOH catalyst at 180 seconds the flow rate was 0.000511 L/s, while for the KOH catalyst at 180 seconds has a flow rate of 0.000511 L/s. flow rate 0.000542 L/s. The highest HHO generating efficiency was obtained for the Ba(OH)₂ catalyst at 180 seconds at 6.20%, for the NaOH catalyst at 180 seconds the efficiency was 5.66%, while the KOH catalyst at 180 seconds had an efficiency of 5.97% .

Keywords: *HHO Generator, NaOH Catalyst, KOH Catalyst, Ba(OH)₂ Catalyst.*