Hydrogen production system using non-thermal plasma electrolysis in glycerol-koh solution

Nelson Saksono, author

Abstrak

Hydrogen is one of chemical industry feedstock and automobile fuel, which is commonly produced by electrolysis. Electrolysis, however, has several constraints that are primarily due to its large energy requirement. Plasma electrolysis is a breakthrough method that not only improves hydrogen production but also suppresses energy consumption. This research has been conducted to investigate the effectiveness of plasma electrolysis on hydrogen product quantity and energy consumption by varying the voltage and glycerol concentration. The results of this research showed that an increase in voltage led to increased hydrogen production and energy consumption; the addition of glycerol caused a decrease in hydrogen production but still resulted in an increase in energy consumption. The process effectiveness of plasma electrolysis at 300V and 0.1M KOH was 8.1 times higher than Faraday electrolysis.