

FABRICATION OF CASSAVA PEEL-BASED BATTERY SEPARATOR VIA FIBER-MATRIX NETWORK PAPER- MAKING METHOD

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ABSTRACT

A battery is an electrical component that functions to store electrical current. Inside a battery, there is a crucial component called a separator. The separator serves as a barrier between the electrodes. In this study, a separator was fabricated using cassava peel as the main material, which was then processed through alkalization, acid treatment, bleaching, and dispersion, before being molded using the paper making process based on a fiber network matrix method. The resulting thickness of the separator varied depending on the amount of slurry poured into the mold. The thinnest separator produced was 64 μm , which is relatively thin compared to commercial separators that have a thickness of 39 μm . Battery assembly was then conducted by stacking the components like a sandwich, combining a carbon plate as the cathode, layered with the fabricated separator infused with electrolyte, and sealed with a zinc plate as the anode. The resulting battery voltage ranged around 0.9 volts, with the highest value of 0.938 volts obtained from the battery assembled using a commercial separator.

Keywords: Battery, Separator, Voltase, Thickness