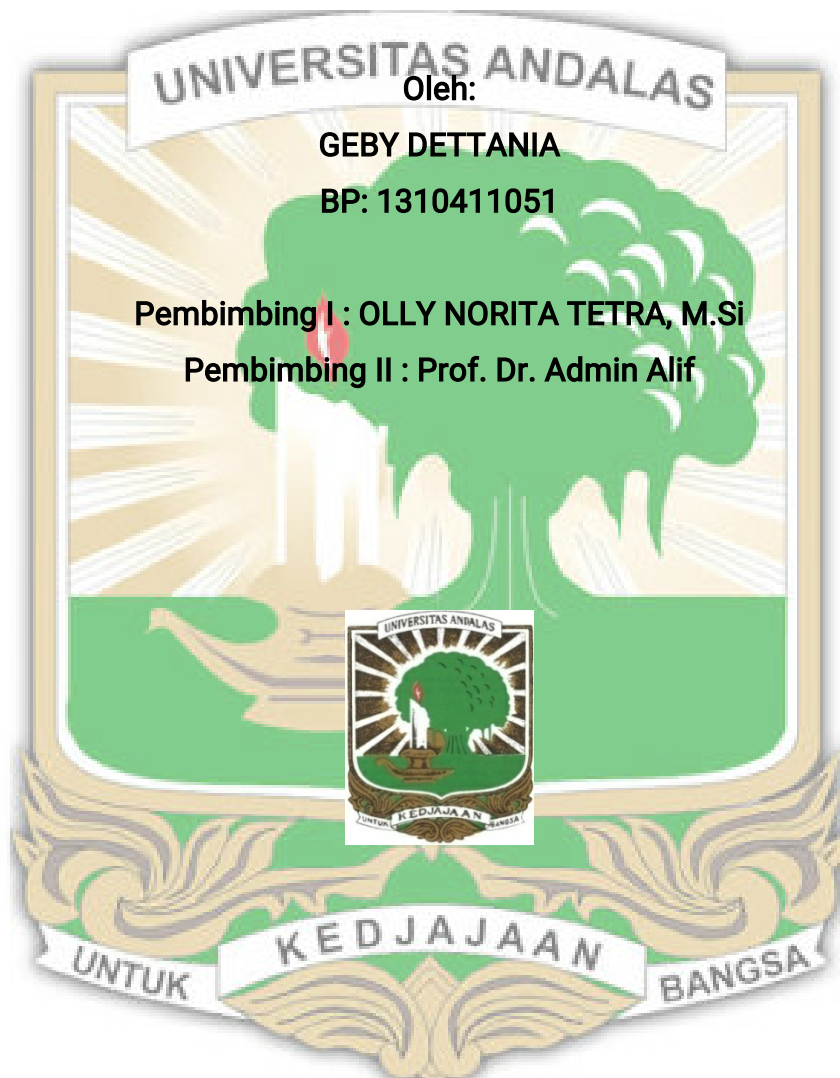


**PENGARUH AKTIVASI KARBON CANGKANG KELAPA SAWIT
DENGAN NaOH SEBAGAI BAHAN ELEKTRODA SUPERKAPASITOR**

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ABSTRACT

The Effect of Activated Carbon of Palm Kernel Shell by NaOH as Supercapacitor Electrode Material

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Carbon from Palm Kernel Shell was activated by NaOH for used as supercapacitor electrode material. The supercapacitor was assembled by plate/sandwich methods. Both electrodes were separated by using a PVA (Polyvinil Alcohol) as a separator. Potassium hydroxide, NaOH 10 M was used as activator in order to increase the capacity value. Prepared activated carbon as electrode material was characterized by XRD, FTIR, SEM-EDX and SAA methods. The activated carbon has 34 times more larger surface area is $43.792 \text{ m}^2/\text{g}$ than carbon without activated which is $1.829 \text{ m}^2/\text{g}$. Supercapacitor was fabricated by variation of particle size, plat area, electrolyte concentration and charging time to obtain the maximum capacity value that is $38.108 \mu\text{F}$ with $3 \times 11 \text{ cm}^2$ plat area, charging time is 35 min, and H_3PO_4 electrolyte concentration as 0.3 N.

Keywords: electrode, supercapacitor, method of plate/sandwich, PVA, separator

