

# Graphene oxide electrodes for electrochemical storage energy in capacitor

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Carbon based materials in their different allotropies have been widely studied due to their singular properties for important technologies, such as aerospace, biomedical, and electrochemical applications. The Graphene consists of a single layer of carbon atoms arranged into a structure resembling a honeycomb, it is one two-dimensional materials composed of carbon atoms, arranged in a hexagonal network [1]. The confinement of electrons in two dimensions due to the long conjugated  $\pi$  system in the graphene structure, conferring exceptional properties of these materials such as high electron mobility, high heat conductivity and high mechanical strength. These properties of graphene provide the industry with a potential alternative to silicon and diamond [2], making it as an excellent candidate with great potential for energy storage devices. The objective of this work is the study and electrochemical characterization of graphene electrodes for use as electrochemical capacitor. The synthesis of graphene was carried out by the oxidation of graphite, modified method of Hummers and Offema [3], and after this process, the thermal reduction. FTIR and diffraction of x-rays measurements were performed and analysis of cyclic voltammetry and electrochemical impedance of the electrodes. The results show that graphene electrode is an excellent candidate for use as electrochemical capacitor.

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References:

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