In this work, graphene was synthesized with the LPCVD method allowing to obtain high quality graphene on large surfaces. In order to characterize the quality and the morphology of the graphene layers obtained, characterization techniques such as XRD, Raman and SEM spectroscopies were used. The results show that annealing favors the cu (111) surface, which increases the probability of obtaining single-layered graphene. On the copper surface, the graphene blanket is a continuous, uniform, high-quality monolayer with an I2D / IG ratio = 2.23 and with ID = 0 (a.u). As a promising transducer for biosensors, graphene shows its biological recognition in electrochemical detection without a marker sufficiently sensitive and specific to the hybridization of amino-modified DNA which results in the appearance of a semi-circle in Nyquist plot in low frequencies.
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