SYNTHESIS AND CHARACTERIZATION OF QUANTUM DOTS GRAPHENE OBTAINED BY TWO DIFFERENT ROUTES

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In this paper, we show two different routes to synthesize graphene quantum dots (GQDs). In the first one synthesis, graphite powder was oxidized following the modified Hummers’ method. In which an oxidation with KMnO₄ in concentrated acid medium is performed. The resulting supernatant in this process was sonicated for 12 hours to obtain the reduction of particle size, thereby obtaining quantum dots. In the second synthesis route, it is carried out in an assisted-microwave acid oxidation. In this case, a heating rate used room temperature to 120°C and temperature is maintained for 9 hours. Quantum dots obtained were characterized by Raman spectroscopy, dynamic light scattering, UV-Vis spectroscopy and fluorescence. In the first case, was observed absorbance peak around 214nm and emission peak at 426 nm. In the second case, the absorbance peak was at 215nm and are emission at 430nm.

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