The purpose of this work is the preparation of graphene aerogels using natural gelling agents and graphene oxide (GO). The graphene aerogel is a three dimensional structure with high porosity and low density. Pore sizes are as large as several tens of microns. These 3D graphene structures maintain their accessibility to their effective surface area by keeping graphene nanosheets as individual as possible, which is essential for achieving maximum functionality of macroscopic graphene-based materials. As a result, they have found a lot of promising applications for these materials as: catalysts, flexible sensors, nanocomposites with high electrical conductivity, storage and conversion of energy, oil absorption, water purification, etc. We used gelatine and L-ascorbic acid as gelling agents. Both compounds are biodegradables and biocompatible natural chemical products. After FTIR and Raman analysis, one interesting finding is that gelatine as well as L-ascorbic acid are both acting like good reduction agents. This fact is of great importance since it helps to substitute thermal reduction that tend to collapse the aerogel structure by the abrupt remotion of the functional group, compromising the 3D structure and the mechanical properties of the final material. SEM images show the porous structure of the graphene aerogel.

**Keywords:** AEROGEL, graphene oxide, gelling agents

**References:**


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