

Study of interaction between amino acids and graphene oxide for gelation

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Graphene oxide (GO) forms supramolecular hydrogels in the presence of some amino acids by 5 Groups which are classified by the nature of the side chain. The interaction between GO and amino acids is different in hydrogen bonding, electrostatic interaction and π - π stacking. In this study, we analyzed characteristics of the each interaction of amino acids with GO by field-emission scanning electron microscopy (FE-SEM), atomic force microscopy (AFM) and rheology. Furthermore, we investigated the phenomenon of GO gelation by adjusting pH and concentration of amino acids. This study will provide a clear understanding of the self-assembly behavior of GO with amino acids and crosslinking-based hydrogels for biomedical applications.