



# Production of Three Dimensional Foamy-Like Graphene Structures for Different Applications

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## ABSTRACT

Three dimensional graphene materials have been attracting much attention as a new generation carbon based structures for a long time. Among them, CVD-grown three dimensional graphene foams (3D-GFs) have porous continuous branches and large specific surface area. The porous nature of these materials allow to make functional composites by covering branches of foams with nanoparticles, polymers or other functional materials. Therefore, 3D-GFs have great potential as suitable materials for different applications such as environmental, energy and tissue engineering.

In this study, the effects of the CVD growth parameters on the specific surface area of F-3D graphene were investigated and the optimum growth parameters were determined by using Central Composite Design (CCD) Method. The samples which were synthesized under optimum values, were used different applications such as waste water treatment, superbat.

**Keywords:** Chemical vapor deposition method (CVD), Central Composite Design (CCD) Method, three dimensional graphene foam (3D-GF), superbat, waste water treatment.