

Abstract

The present application relates to a method for forming high-quality film by means of a CVD method. Specifically, the present application provides a method for depositing a flowable film on a substrate, the method comprising: introducing an organosilicon precursor into a deposition chamber, the deposition chamber containing a substrate; generating at least one type of nitrogen-containing free radical in a remote plasma; introducing the nitrogen-containing free radical into the deposition chamber; reacting the nitrogen-containing free radical with the organosilicon precursor, to produce a polysilazane chain, the polysilazane chain being deposited on the substrate and being flowable on a surface of the substrate, and forming the flowable film. The method of the present application can produce a polysilazane chain which is flowable on the surface of a substrate, to form a flowable film. The flowable film can quickly fill holes or gaps, so as to prevent the holes or gaps from forming permanent defects.

(FIG. 1)