ABSTRACT

This invention pertains to a method for forming thin films on substrates wherein the films are produced by applying a solution of an electrically insulating, heat-curing resin onto the substrate, evaporating the solvent and then exposing the resin to high energy radiation to cure the resin. The resin solution contains a substance selected from solvents and gas generating additives that causes dedensification of the film during cure of the resin. This results in a film having a dielectric constant of below 2.7. This invention also pertains to a semiconductor device having an interconnect structure comprising at least one electrically conductive layer with an interposed insulating layer having a dielectric constant of less than 2.7 wherein the insulating layer is produced by the method of this invention.

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