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(54) Title: LOW-K DIELECTRIC FUNCTIONAL IMPRINTING MATERIALS

(57) Abstract: In a substantially planar circuit, the conductors are separated by an inorganic material with a dielectric constant of less than about 3.0. The dielectric layers are formed in a process that includes defining trenches and/or vias for the conductors by imprinting an initially planar layer of a radiation curable composition. The imprinting die is preferably UV transparent such that the composition is UV cured while the imprint die is in place. The curable composition includes an organic modified silicate compound and a second decomposable organic component, the latter forming nanometer scale pores as the organic compounds are subsequently decomposed to provide a polysilicate matrix. The pores reduce the effective dielectric constant from that of otherwise dense silicon dioxide.



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