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(54) Title: **LOW DIELECTRIC MANO-POROUS MATERIAL OBTAINABLE FROM POLYMER DECOMPOSITION**

(57) Abstract: The present invention relates to novel low dielectric constant nanoporous dielectric films having improved mechanical strength, and to improved processes for producing the same on substrates suitable for use in the production of integrated circuits. The nanoporous dielectric films are prepared by a process of preparing a mixture of a spin-on-glass material with a suitable thermally degradable polymer in a compatible solvent or solvents. Applying the resulting mixture onto a substrate suitable for use in the production of an integrated circuit, to produce a coated substrate. The coated substrate is then heated for a time and at one or more temperatures effective to remove the thermally degradable polymer, so as to produce the desired low dielectric nanoporous dielectric film. Semiconductors, such as integrated circuits with films according to the invention, are also provided.

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