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(54) Title: LOW DIELECTRIC CONSTANT MATERIALS AND METHODS OF PREPARATION THEREOF

(57) Abstract: The present invention is directed to low dielectric polymers and to methods of producing these low dielectric constant polymers, dielectric materials and layers, and electronic components. In one aspect of the present invention, an isomeric mixture of thermosetting monomers, wherein the monomers have a core structure and a plurality of arms, is provided, and the isomeric mixture of thermosetting monomers is polymerized, wherein polymerization comprises a reaction of an ethynyl group that is located in at least one arm of a monomer. In yet another aspect of the inventive subject matter, spin-on low dielectric constant materials are formed having a first backbone with an aromatic moiety and a first reactive group, and a second backbone with an aromatic moiety and a second reactive group, wherein the first and second backbone are crosslinked via the first and second reactive groups in a crosslinking reaction preferably without an additional crosslinker, and wherein a cage structure having at least eight (8) atoms is covalently bound to at least one of the first and second backbone.

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