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(54) Title: ANIONIC POLISHING PADS FORMED BY PRINTING PROCESSES

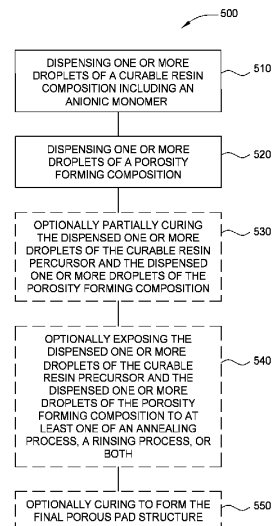


FIG. 5

(57) **Abstract:** Polishing articles and methods of manufacturing polishing articles used in polishing processes and cleaning processes are provided. More particularly, implementations disclosed herein relate to composite polishing articles having tunable properties such as hydrophilicity and zeta potential. 3D printed chemical-mechanical planarization (CMP) pads composed of UV curable acrylic chemistry are generally hydrophobic in nature. Such hydrophobic behavior affects the wetting properties with abrasive-based polishing slurries such as ceria-base slurries. However, in order to increase the planarization and removal rate while decreasing defects, hydrophilic pads are preferred. In addition, it is desirable that the zeta potential (Z_p) of the pads be tunable over a wide range of conditions at different pH values. Implementations of the present disclosure include methods for increasing the hydrophilicity and tuning the Z_p of the pads with anionic additives and pads produced using these methods.

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