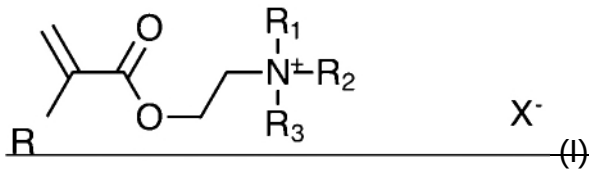
Claims:

1. A method of forming a polishing pad, comprising:

depositing a plurality of composite layers with a 3D printer to reach a target thickness, wherein depositing the plurality of composite layers comprises:

dispensing one or more droplets of a curable resin precursor composition onto a support, wherein the curable resin precursor composition comprises:



(I)

wherein R is H or CH_3, R_1, R_2, and R_3 may be identical or different and may each be, independently of one another, a linear or branched C_1 to C_8 alkyl group.

2. The method of claim 1, further comprising:

dispensing one or more droplets of a porosity-forming composition onto the support, wherein at least one component of the porosity-forming composition is removable to form the pores in the polishing pad.

3. The method of claim 2, wherein X^- is selected from OH^-, CH_3COO^-, CF_3COO^-, $CH_3SO_3^-$, or $CF_3SO_3^-$.

4. The method of claim 1, wherein R is H or CH_3, R_1, R_2, and R_3 are each independently selected from a C_1 to C_2 alkyl group.

5. The method of claim 1, wherein R is H or CH_3, R_1 and R_2 are CH_3, and R_3 is CH_2CH_3.

6. The method of claim 1, wherein R is H or CH_3, and R_1, R_2, and R_3 are CH_3.

7. The method of claim 6, wherein X^- is $CH_3SO_3^-$.

8. The method of claim 2, wherein the porosity-forming composition comprises a porosity-forming agent selected from glycols, glycol-ethers, amines, and combinations thereof.

9. The method of claim 2, wherein the porosity-forming composition comprises a porosity-forming agent selected from ethylene glycol, butanediol, dimer diol, propylene glycol-(1,2), propylene glycol-(1,3), octane-1,8-diol, neopentyl glycol, cyclohexane dimethanol (1,4-bis-hydroxymethylcyclohexane), 2-methyl-1,3-propane diol, glycerin, trimethylolpropane, hexanediol-(1,6), hexanetriol-(1,2,6) butane triol-(1,2,4), trimethylolethane, pentaerythritol, quinitol, mannitol, sorbitol, methylglycoside, diethylene glycol, triethylene glycol, tetraethylene glycol, polyethylene glycol, dibutylene glycol, polybutylene glycol, ethylene glycol, ethylene glycol monobutyl ether (EGMBE), diethylene glycol monoethyl ether, ethanolamine, diethanolamine (DEA), triethanolamine (TEA) and combinations thereof.

10. The method of claim 2, further comprising partially curing the dispensed one or more droplets of the curable resin precursor composition and the dispensed one or more droplets of the porosity-forming composition prior to exposing the dispensed one or more droplets of the curable resin precursor composition and the dispensed one or more droplets of the porosity-forming composition to at least one of an annealing processing, a rinsing process, or both.

11. A method of forming a polishing pad, comprising:

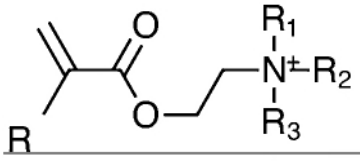
depositing a plurality of composite layers with a 3D printer to reach a target thickness, wherein depositing the plurality of composite layers comprises:

dispensing one or more droplets of a curable resin precursor composition onto a support, wherein the curable resin precursor composition comprises:

a first resin precursor component that comprises a multifunctional acrylate oligomer;

a second resin precursor component that comprise a multifunctional acrylate monomer; and

a cationic monomer having the structure:



(I)

wherein R is H or CH_3, R_1, R_2, and R_3 may be identical or different and may each be, independently of one another, a linear or branched C_1 to C_8 alkyl group;

~~exposing the one or more droplets of the curable resin precursor composition to electromagnetic radiation to at least partially cure the curable resin precursor composition; and~~

~~repeating the dispensing and exposing to build a 3D relief on the support; and~~

~~solidifying the plurality of composite layers to form a pad body.~~

~~12. The method of claim 11, wherein X^- is selected from OH^-, CH_3COO^-, CF_3COO^-, $CH_3SO_3^-$, or $CF_3SO_3^-$.~~

~~13. The method of claim 11, wherein R is H or CH_3, and R_1, R_2, and R_3 are each independently selected from a C_1 to C_2 alkyl group.~~

~~14. The method of claim 11, wherein R is H or CH_3, R_1 and R_2 are CH_3, and R_3 is CH_2CH_3.~~

~~15. A polishing article formed according to claim 11.~~

1. An invention not claimed in any divisional application.