What is claimed is:

1. A resin composition, comprising:

a free radical curable resin matrix including an acrylate and a siloxane, the free radical curable resin matrix being selected from the group consisting of 1,3-bis(3-methacryloxypropyl) tetramethyldisiloxane, tetramethyl tetrakis[3-acryloxypropyl]cyclotetrasiloxane, acryloxypropyl methylsiloxane homopolymer, and combinations thereof;

a free radical photoinitiator, the free radical photoinitiator being phenylbis(2,4,6-trimethylbenzoyl)phosphine oxide;

an epoxy resin matrix; and

a photoacid generator.

2. A flow cell, comprising:

a substrate; and

a cured, patterned resin on the substrate, the cured, patterned resin including depressions separated by interstitial regions, and the cured, patterned resin having been formed from the resin composition of claim 1.

3. The flow cell as defined in claim 2, further comprising:

a polymer coating in the depressions; and

a primer grafted to the polymer coating.

4. A method of making a flow cell, comprising:

depositing the resin composition of claim 1 on a substrate;

nanoimprinting the deposited resin composition using a working stamp; and

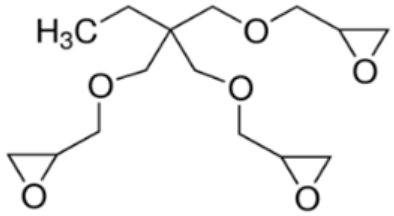
curing the deposited resin composition to form a cured, patterned resin.

5. The resin composition as defined in claim 1, wherein a weight% ratio of the epoxy resin matrix to the photoacid generator in the resin composition ranges from about 99.8:0.2 to about 90:10.

6. The resin composition as defined in claim 1, wherein the epoxy resin matrix is selected from the group consisting of:

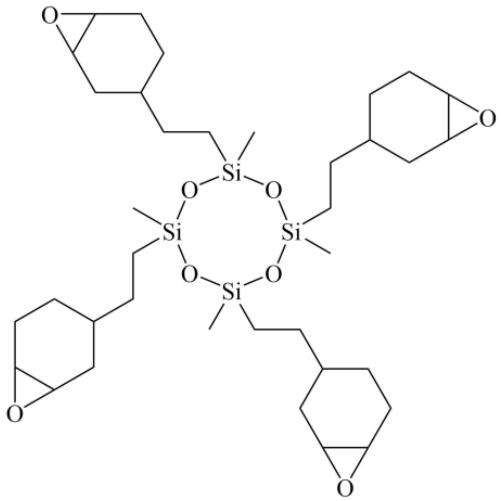
i) an epoxy functionalized polyhedral oligomeric silsesquioxane (POSS);

ii) trimethylolpropane triglycidyl ether:



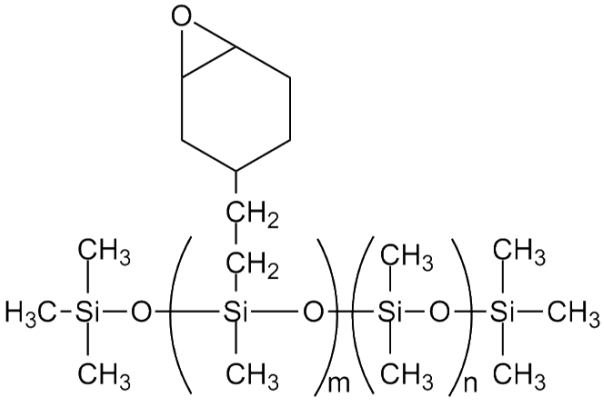
;

iii) tetrakis(epoxycyclohexyl ethyl)tetramethyl cyclotetrasiloxane:



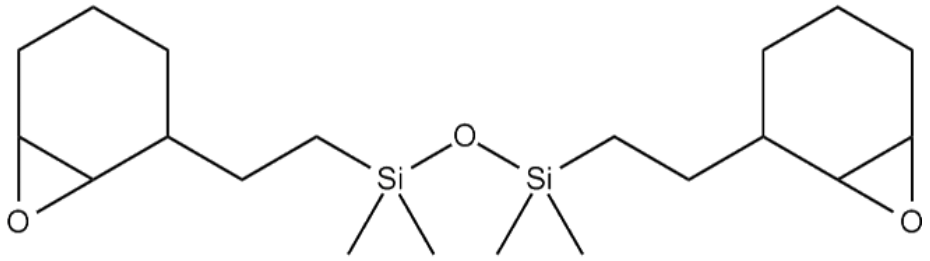
;

iv) a copolymer of (epoxycyclohexylethyl)methylsiloxane and dimethylsiloxane:



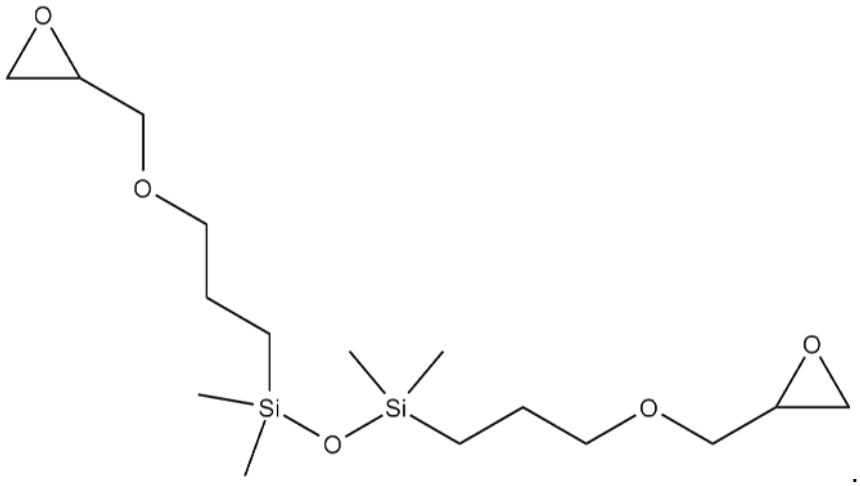
(wherein a ratio of m:n ranges from 8:92 to 10:90);

v) 1,3-bis[2-(3,4-epoxycyclohexyl) ethyl] tetramethyl disiloxane:



;

vi) 1,3-bis(glycidoxypropyl)tetramethyl disiloxane:

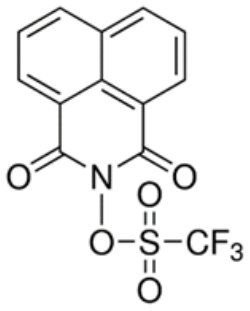


; and

vii) combinations thereof.

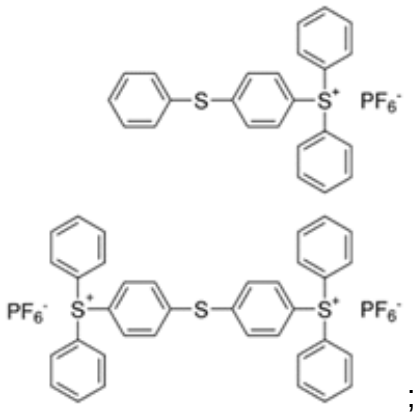
7. The resin composition as defined in claim 1, wherein the photoacid generator is selected from the group consisting of:

i) N-hydroxynaphthalimide triflate:



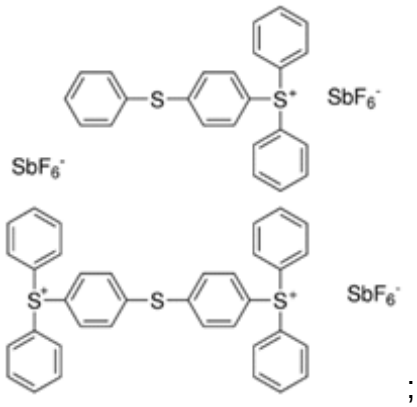
;

ii) triarylsulfonium hexafluorophosphate salts, mixed:



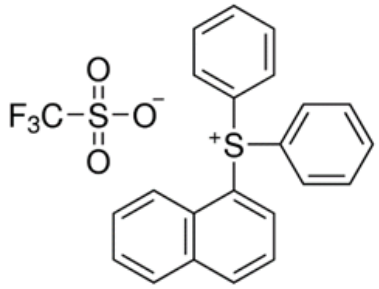
;

iii) triarylsulfonium hexafluoroantimonate salts, mixed:



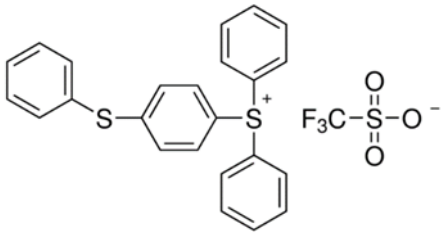
;

iv) 1-naphthyl diphenylsulfonium triflate (NDS-TF):



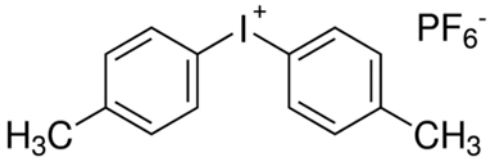
;

v) (4-phenylthiophenyl)diphenylsulfonium triflate:



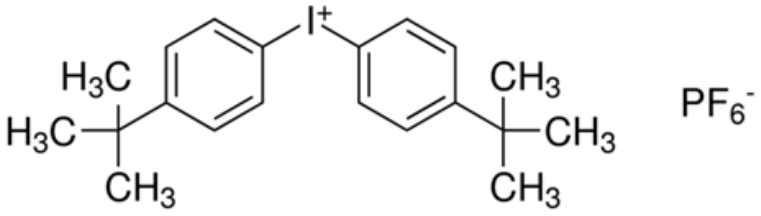
;

vi) bis-(4-methylphenyl)iodonium hexafluorophosphate:



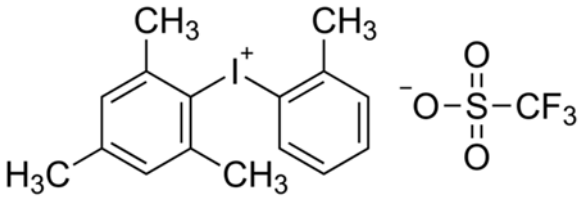
;

vii) bis(4-tert-butylphenyl)iodonium hexafluorophosphate:



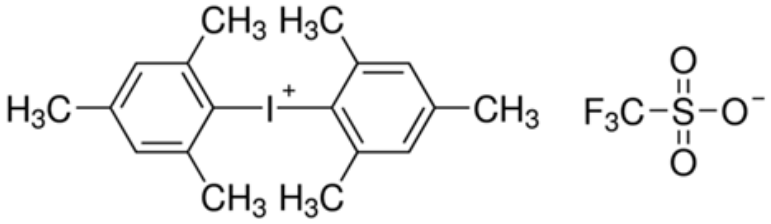
;

viii) (2-methylphenyl)(2,4,6-trimethylphenyl)iodonium triflate:



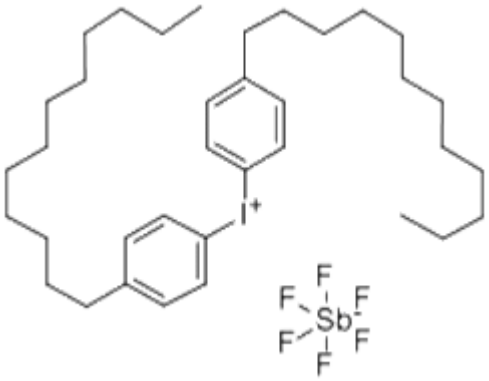
;

xi) bis(2,4,6-trimethylphenyl)iodonium triflate:



;

x) bis-(4-dedecylphenyl)iodonium hexafluoroantimonate salt:



; and

xi) combinations thereof.

8. The resin composition as defined in claim 1, further comprising a surfactant selected from the group consisting of a polyethylene sorbitol ester, a polyoxyethylene sorbitol ester, or octylphenol ethoxylate.

9. The resin composition as defined in claim 1, further comprising a solvent selected from the group consisting of propylene glycol monomethyl ether acetate, toluene, dimethyl sulfoxide, and tetrahydrofuran.