Claims:

1. A photocurable composition consisting of:
   i) 20-55% by weight of a polymerizable core resin having 20-40 carbon atoms;
   ii) 40-70% by weight of a diluent resin miscible with said core resin, having up to two reactive terminal functional groups capable of covalently bonding to said core resin, or rheology modifier, or both; wherein the diluent resin has a viscosity of less than 1 Pa.s;
   iii) ~~at least about 1%~~1-5% by weight of at least one rheology modifier, said ~~-~~rheology modifier being distinct from said diluent resin;
   iv) photoinitiators; and
   v) photostabilizers,

   wherein the rheology modifier is a compound of general formula I:

$$A—P_n$$

Formula I

wherein A is selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted aryl group, optionally substituted alkoxy and optionally substituted organosilicon ~~-~~polymer;

P is a polymerizable terminal functional group capable of covalently bonding to said core resin, or said diluent resin, or both; and wherein P is, in each instance, independently selected from the group consisting of acrylates, methacrylates and epoxides, and

wherein n is an integer of between 1 to 20.

2. The photocurable composition of claim 1, wherein P is a methacrylate ~~, acrylate, vinyl or epoxide~~ group.

3. The photocurable composition of any of the preceding claims, P is an acrylate group.

4. The photocurable composition of any one of the preceding claims, wherein n is 1-10.

5. The photocurable composition of any one of the preceding claims, wherein A comprises between 1 to 40 carbon atoms.

6. The photocurable composition of any one of the preceding claims, wherein A comprises between 1 to 20 carbon atoms.

7. The photocurable composition of any one of the preceding claims, wherein A is an optionally substituted aliphatic alkyl, optionally substituted aliphatic alkoxy, optionally substituted aliphatic alkenyl, optionally substituted aromatic group, or optionally substituted organosilicon group.

8. The photocurable composition of any one of the preceding claims, wherein A is an optionally substituted aliphatic alkyl, optionally substituted aromatic or optionally substituted organosilicon group.

9. The photocurable composition of any one of the preceding claims, wherein A comprises at least one polar substituent selected from the group consisting of acrylates, methacrylates, epoxides, aldehydes, ketones, carboxylic acids, ethers, esters, amides, hydroxyls, amines, halogens and nitriles.

10. The photocurable composition of any one of preceding claims, wherein the rheology modifier further comprises a linker group B between the polymerizable group P and central group A, wherein the linker group B is selected from the group consisting of optionally substituted alkyl, optionally substituted alkenyl, optionally substituted aryl, optionally substituted arylalkyl, optionally substituted arylalkenyl, optionally substituted alkylaryl, optionally substituted alkenylaryl, optionally substituted alkoxy, optionally substituted alkenyloxy, optionally substituted aryloxy and optionally substituted siloxy groups.

11. The photocurable composition of any one of the preceding claims, wherein n is 8.

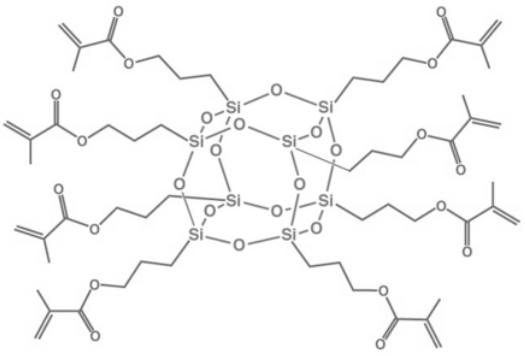
12. The photocurable composition of any one of claims 1-10, wherein A is a cyclic ether group.

13. The photocurable composition of any one of claims 1-10, wherein the rheology modifier is tetrahydrofurfuryl methacrylate.

14. The photocurable composition of any one of claims 1-11, wherein A is an optionally substituted organosilicon hybrid cage molecule.

15. The photocurable composition of any one of claims 1-11, wherein A is an optionally substituted polyhedral oligomeric silsequioxane (POSS) cage.

16. The photocurable composition of any one of claims 1-11, wherein the rheology modifier is a methacrylate functionalized POSS cage molecule:



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17. The photocurable composition of any one of the preceding claims, wherein the rheology modifier is present in an amount of about ~~1-50~~2-5% by weight of the photocurable composition.

18. The photocurable composition of any one of the preceding claims, wherein the rheology modifier is present in an amount of ~~1-10~~3-4% by weight of the photocurable composition

19. The photocurable composition of any one of the preceding claims, wherein the polymerizable core resin is present in an amount of 35-~~60~~55% by weight of the photocurable composition.

20. The photocurable composition of any one of the preceding claims, wherein the diluent resin is present in an amount of about ~~30-70~~40-60% by weight of the photocurable composition.