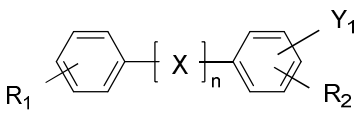
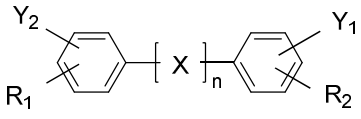
CLAIMS

1. A photocurable composition comprising a polymerizable material and a photoinitiator, wherein the polymerizable material comprises a first polymerizable monomer having a structure of Formula (1) or Formula (2):



(1) or


(2),

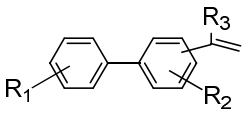
with

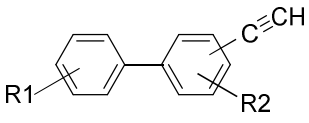
X being C_1 - C_4-alkyl or oxygen (O); n being 0 or 1

Y_1, Y_2 being  or , with R_3 being H or methyl, wherein Y_1 and Y_2 being the same or different and an amount of Y_1 and Y_2 per benzene ring being 1, 2, or 3;

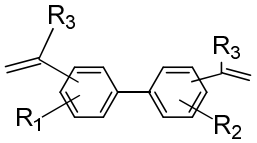
R_1, R_2 being substituted or unsubstituted alkyl or aryl, and an amount of each of R_1 and R_2 per benzene ring being 0, 1, 2, 3, or 4.

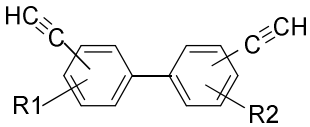
2. The photocurable composition of claim 1, wherein the first polymerizable monomer includes a structure selected from Formula (3), (4), (5), or (6):



(3) ;


(4) ;

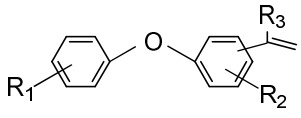


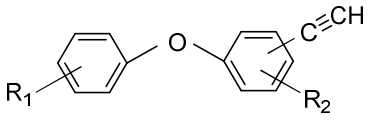
(5);


(6),

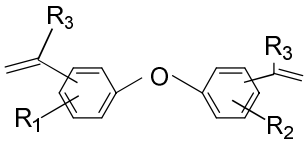
wherein R_3 is H or methyl, and R_1 and R_2 are one or more alkyl, aryl, or alkyl aryl and may be the same or different, an amount of each of R_1 and R_2 per benzene ring being 0, 1, 2, 3, or 4, an amount of  per benzene ring being 1 or 2, and an amount of or  per benzene ring being 1 or 2.

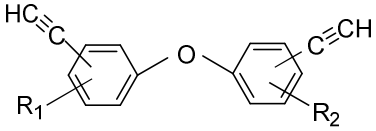
3. The photocurable composition of claim 1, wherein the first polymerizable monomer includes a structure selected from Formula (7), (8), (9), or (10):



(7) ; 

(8) ;



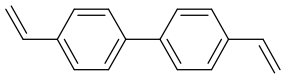
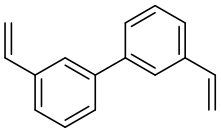
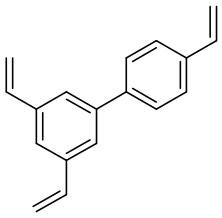
(9) ; or 

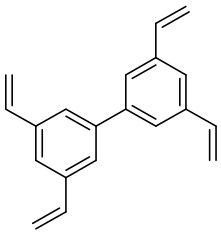
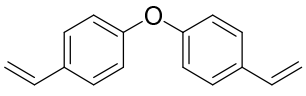
(10),

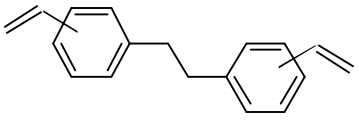
wherein R_3 is H or methyl, and R_1 and R_2 are one or more alkyl, aryl, or alkyl aryl and may be the same or different, an amount of each of R_1 and R_2 per benzene ring being 0, 1, 2, 3, or 4, and an amount of 

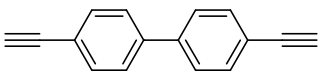
per benzene ring being 1 or 2, and an amount of or  per benzene ring being 1 or 2.

4. The photocurable composition of claim 1, wherein the first polymerizable monomer is at least one monomer selected from the following structures:


(11); 
(12); 
(13) ;


(14) ; 

(15) ; or 
(16); or


(17).

5. The photocurable composition of claim 1, wherein the polymerizable material comprises at least one second monomer, the at least one second monomer including at least one acrylate monomer.
6. The photocurable composition of claim 1, wherein an amount of the polymerizable material is at least 80 wt% based on the total weight of the photocurable composition.
7. The photocurable composition of claim 1, wherein a viscosity at 23°C of the photocurable composition is not greater than 50 mPa s.
8. The photocurable composition of claim 1, wherein the photocurable composition comprises a solvent in an amount of at least 15 vol% based on the total volume of the photocurable composition.
9. The photocurable composition of claim 1, wherein the photocurable composition is essentially free of a solvent.
10. The photocurable composition of claim 1, wherein an amount of the first monomer is at least 5 wt% and not greater than 50 wt% based on the total weight of the photocurable composition.
11. The photocurable composition of claim 10, wherein the amount of the first monomer is at least 30 wt% based on the total weight of the polymerizable material.
12. The photocurable composition of claim 1, wherein the composition is adapted for use in inkjet adaptive planarization (IAP) or nanoimprint lithography (NIL).
13. The photocurable composition of claim 1, wherein a photo-cured layer of the photocurable composition has a carbon content of at least 70% or a thermal stability of a least 250°C.
14. A method of forming a photo-cured layer on a substrate, comprising:
applying a layer of the photocurable composition of any one of claims 1-13 on the substrate, bringing the photocurable composition into contact with a template or a superstrate; irradiating the photocurable composition with light to form a photo-cured layer; and removing the template or the superstrate from the photo-cured layer.
15. A method of forming an article, comprising:
applying a layer of the photocurable composition of any one of claims 1-13 on a substrate,

bringing the photocurable composition into contact with a template or a superstrate;
irradiating the curable composition with light to form a cured layer;
removing the template or the superstrate from the photo-cured layer;
forming a pattern on the substrate;
processing the substrate on which the pattern has been formed in the forming; and
manufacturing an article from the substrate processed in the processing.