WHAT IS CLAIMED IS:

1. A method of coupling oligonucleotides to a polymer, the method comprising:

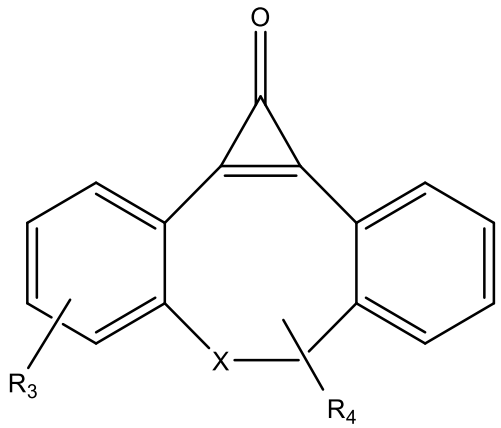
selectively irradiating inactive moieties in a first region of a polymer with light, while not irradiating inactive moieties in a second region of the polymer, to generate first active moieties in the first region of the polymer;

coupling the first active moieties to first oligonucleotides;

irradiating the inactive moieties in the second region of the polymer with light to generate second active moieties in the second region of the polymer; and

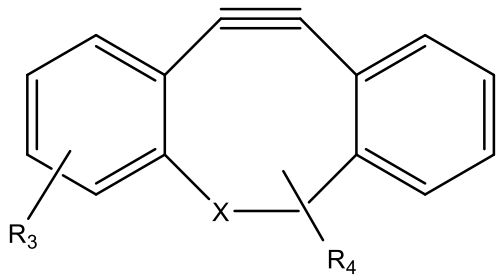
coupling the second active moieties to second oligonucleotides.

2. The method of claim 1, wherein the inactive moieties in the first region of the polymer or in the second region of the polymer comprise a cyclopropenone-masked dibenzocyclooctyne having the structure:



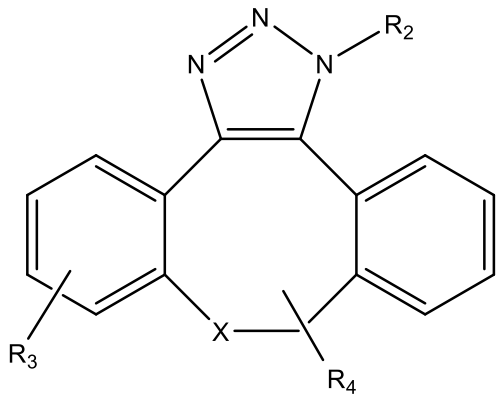
wherein one of R_3 and R_4 is R_1 and the other is H; wherein R_1 is a linkage to a backbone of the polymer; and wherein X is CH_2, O, S, or NH if R_4 is not directly coupled to X, or wherein X is CH or N if R_4 is directly coupled to X.

3. The method of claim 2, wherein the first active moieties or the second active moieties comprise a dibenzocyclooctyne:



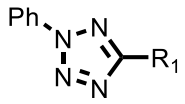
.

4. The method of claim 3, wherein the first oligonucleotides or second oligonucleotides are coupled to azides (N_3) that react with the dibenzocyclooctyne to form a cycloadduct having the structure:



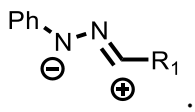
where R_2 represents the first oligonucleotides or the second oligonucleotides.

5. The method of claim 1, wherein the inactive moieties in the first region of the polymer or in the second region of the polymer comprise a tetrazole having the structure:



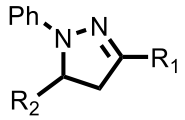
where R_1 represents a linkage to a backbone of the polymer.

6. The method of claim 5, wherein the first active moieties or the second active moieties comprise nitrile imines having the structure:



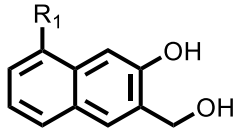
.

7. The method of claim 6, wherein the first oligonucleotides or second oligonucleotides are coupled to olefins that react with the first active moieties or the second active moieties to form a pyrazoline having the structure:



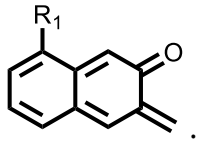
where R_2 represents the first oligonucleotides or the second oligonucleotides.

8. The method of claim 1, wherein the inactive moieties in the first region of the polymer or in the second region of the polymer comprise a 3-(hydroxymethyl)-2-naphthol having the structure:



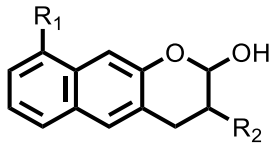
where R_1 represents a linkage to a backbone of the polymer.

9. The method of claim 8, wherein the first active moieties or the second active moieties comprise a compound having the structure:



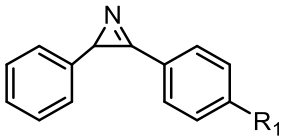
.

10. The method of claim 9, wherein the first oligonucleotides or second oligonucleotides are coupled to vinyl ethers that react with the first active moieties or the second active moieties to form a benzochroman having the structure:



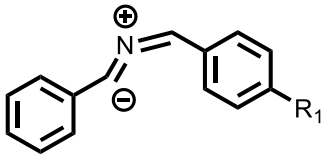
where R_2 represents the first oligonucleotides or the second oligonucleotides.

11. The method of claim 1, wherein the inactive moieties in the first region of the polymer or in the second region of the polymer comprise a 2H-azirine having the structure:



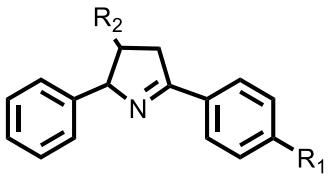
where R_1 represents a linkage to a backbone of the polymer.

12. The method of claim 11, wherein the first active moieties or the second active moieties comprise a nitrile ylide having the structure:



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13. The method of claim 12, wherein the first oligonucleotides or second oligonucleotides are coupled to olefins that react with the first active moieties or the second active moieties to form a pyrroline having the structure:



where R_2 represents the first oligonucleotides or the second oligonucleotides.

14. The method of any one of claims 1 to 13, wherein the first oligonucleotides comprise a mixture of first primers lacking an excision moiety and second primers comprising an excision moiety.

15. The method of claim 14, wherein the second oligonucleotides comprise a mixture of third primers comprising an excision moiety and fourth primers lacking an excision moiety.

16. The method of claim 15, wherein the first and third primers have the same sequence as one another except for the excision moiety, and wherein the second and fourth primers have the same sequence as one another except for the excision moiety.

17. The method of claim 15 or claim 16, wherein the sequences of the first and second primers are orthogonal to one another, and wherein the sequences of the third and fourth primers are orthogonal to one another.

18. The method of any one of claims 1 to 17, wherein the first region of the polymer comprises a plurality of first subregions, and wherein the second region of the polymer comprises a plurality of second subregions.

19. The method of claim 18, wherein each of the first subregions is contiguous with a corresponding one of the second subregions.

20. The method of claim 19, wherein each of the first subregions, and the corresponding one of the second subregions within which that first subregion is continuous, is located within a well.

21. The method of any one of claims 1 to 20, further comprising:

depositing photoresist over the first and second regions;

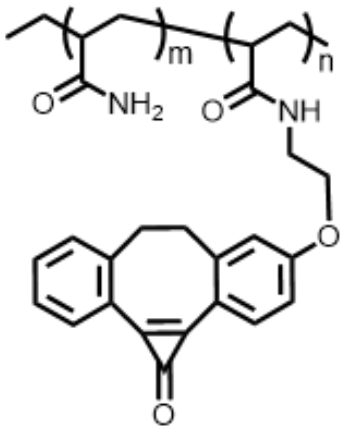
while selectively irradiating the inactive moieties in the first region of the polymer with light and while not irradiating the inactive moieties in the second region of the polymer, irradiating the photoresist over the first region with light;

before coupling the first active moieties to the first oligonucleotides, removing the irradiated photoresist from the first region of the polymer; and

before coupling the second active moieties to the second oligonucleotides, removing the photoresist from the second region of the polymer.

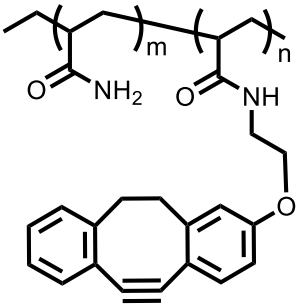
22. The method of claim 21, wherein the irradiated photoresist is removed from the first region of the polymer and the photoresist is removed from the second region of the polymer in a common step as one another.

23. A polymer, comprising a poly(cyclopropenone-masked dibenzocyclooctyne-acrylamide-co-acrylamide) copolymer having the structure:



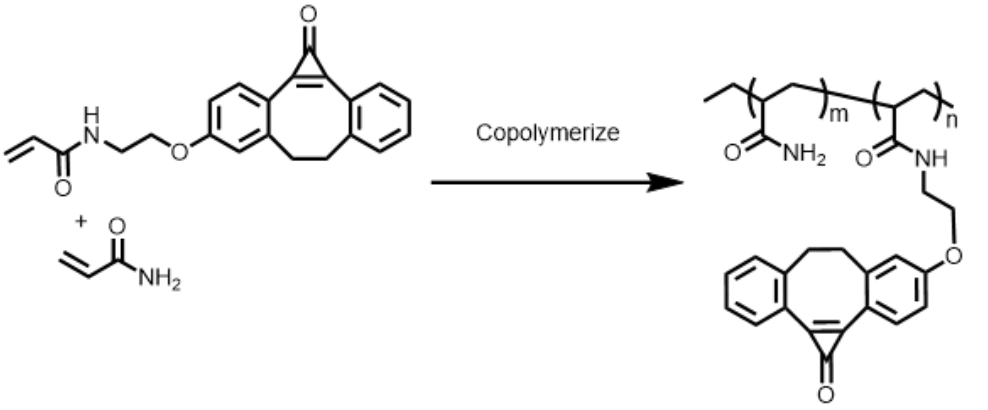
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24. A polymer, comprising a poly(dibenzocyclooctyne-acrylamide-co-acrylamide) copolymer having the structure:



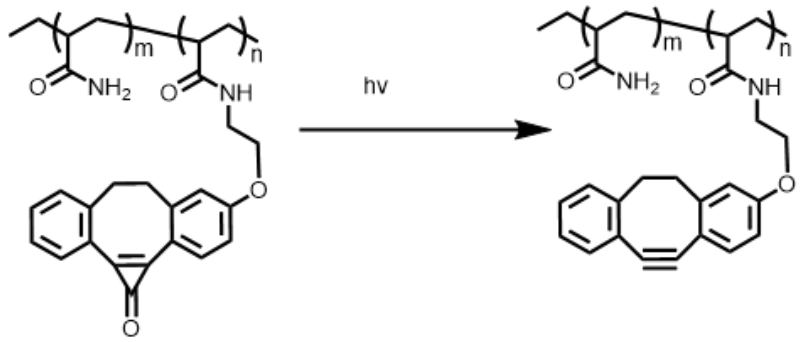
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25. A method of making a polymer, the method comprising the radical-induced polymerization reaction:



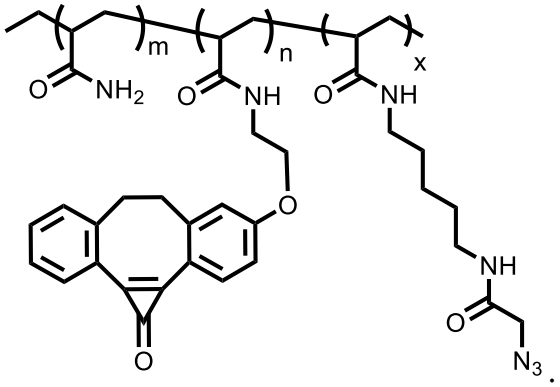
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26. A method of making a polymer, the method comprising the light-induced reaction:



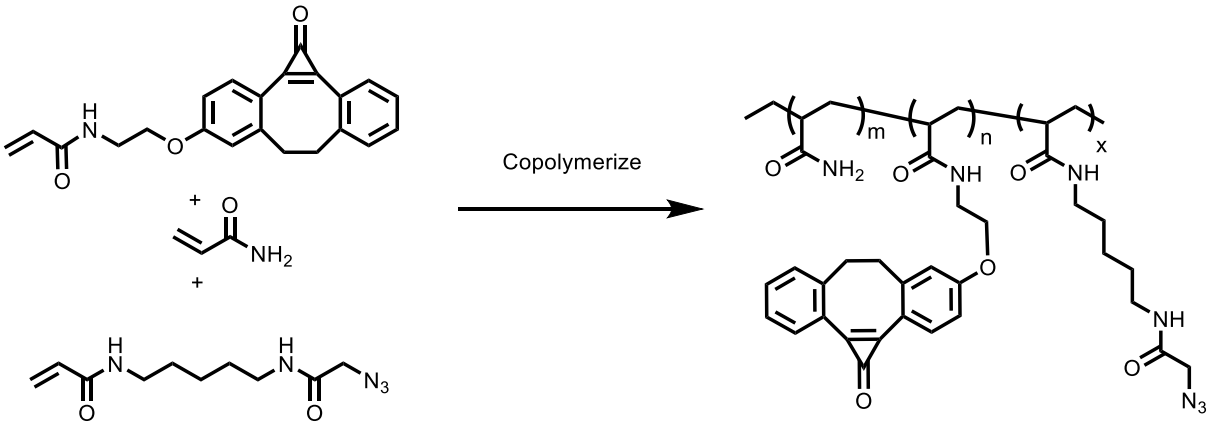
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27. A polymer, comprising the structure:



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28. A method of making a polymer, the method comprising the radical-induced polymerization reaction:



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