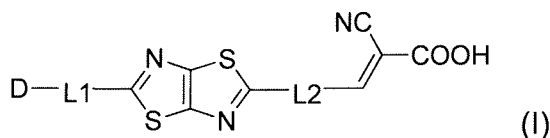


CLAIMS:

1. An organic dye for use in dye-sensitized solar cell, the organic dye represented by the structure of formula (I):

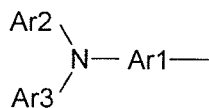


wherein D is a donor group;

10 L1 is a single bond, a benzene ring or an electron transfer linking group having at least one heterocyclic ring selected from the group consisting of a thiophene ring, a furan ring, ~~a benzene ring~~, a pyrrole ring, and a condensed heterocyclic ring formed from any combinations of the said rings; and

15 L2 is a benzene ring or an electron transfer linking group having at least one heterocyclic ring selected from the group consisting of a thiophene ring, a furan ring, ~~a benzene ring~~, a pyrrole ring, and a condensed heterocyclic ring formed from any combinations of the said rings; and

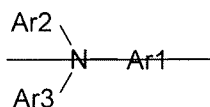
20 wherein the donor group D is represented by D1, wherein D1 represents an alkyl substituted carbazole, an alkyl or an aryl substituted indoline or an alkyl substituted phenothiazine, or wherein the donor group D is represented by:-



wherein Ar1 represents a substituted or unsubstituted arylene group; and
Ar2 and Ar3 each independently represent a substituted or unsubstituted aryl group.

30

~~2. The organic dye according to claim 1, wherein the donor group D is represented by:~~



~~wherein Ar1 represents a substituted or unsubstituted arylene group; and Ar2 and Ar3 each independently represent a substituted or unsubstituted aryl group.~~

32. The organic dye according to claim 21, wherein Ar2 or Ar3 represents a substituted aryl group, a substituted group of the substituted aryl group is selected from the group consisting of an alkyl having 1 to 12 carbon atom(s) or an alkoxy having 1 to 12 carbon atom(s).

43. The organic dye according to claim 1 or 2, wherein Ar1 is a substituted or unsubstituted 1,4-phenyl, 2,7-fluorene or 2,7-carbazole.

54. The organic dye according to ~~claim 34~~, wherein a substituted group of the substituted or unsubstituted 1,4-phenyl, 2,7-fluorene or 2,7-carbazole is selected from the group consisting of an alkyl having 1 to 12 carbon atom(s) and an alkoxy having 1 to 12 carbon atom(s).

65. The organic dye according to claim 43, wherein Ar1 is 1-4-phenyl.

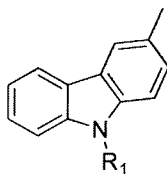
76. The organic dye according to claim 21, wherein Ar2 and Ar3 each independently represent a substituted or unsubstituted phenyl, 2-fluorenyl, 1-naphthyl, 9-anthracenyl, 1-pyrenyl or 2-carbazolyl.

87. The organic dye according to claim 76, wherein Ar2 and Ar3 each independently is a substituted or unsubstituted phenyl.

~~9. The organic dye according to claim 1, wherein the donor group D is represented by D1, wherein D1 represents an alkyl substituted carbazole, an alkyl or an aryl substituted indoline or an alkyl substituted phenothiazine.~~

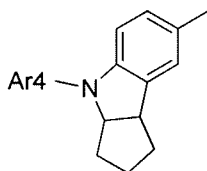
408. The organic dye according to claim 91, wherein when the donor group D is represented by D1, L1 represents a single bond, a benzene ring, a vinylene or an electron transfer linking group having at least one heterocyclic ring selected from the group consisting of a thiophene ring, a furan ring, ~~a benzene ring~~, a pyrrole ring, and a condensed heterocyclic ring formed from any combinations of the said rings; and L2 represents a benzene ring, a vinylene or an electron transfer linking group having at least one heterocyclic ring selected from the group consisting of a thiophene ring, a furan ring, ~~a benzene ring~~, a pyrrole ring, and a condensed heterocyclic ring formed from any combinations of the said rings.

449. The organic dye according to claim 91, wherein D1 is an alkyl substituted carbazole represented by the following formula:



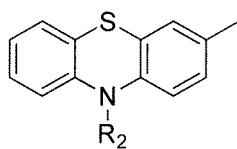
wherein R₁ represents an alkyl having 4 to 8 carbon atoms.

4210. The organic dye according to claim 91, wherein D1 is an alkyl substituted indoline represented by the following formula:



wherein Ar₄ represents a substituted or unsubstituted phenyl.

4311. The organic dye according to claim 91, wherein D1 is an alkyl substituted phenothiazine represented by the following formula:



wherein R₂ represents an alkyl having 4 to 8 carbon atoms.

5 | 4412. A semiconductor film electrode comprising an organic dye according to claim 1.

10 | 4513. A dye-sensitized solar cell comprising a semiconductor film electrode according to claim 4412.

4614. A dye-sensitized solar cell comprising an organic dye according to claim 1, an electrolyte and photo-electrodes.