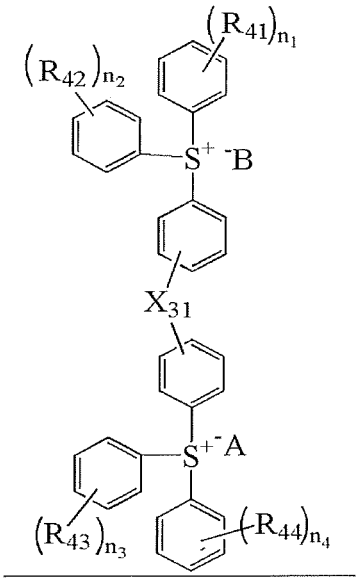
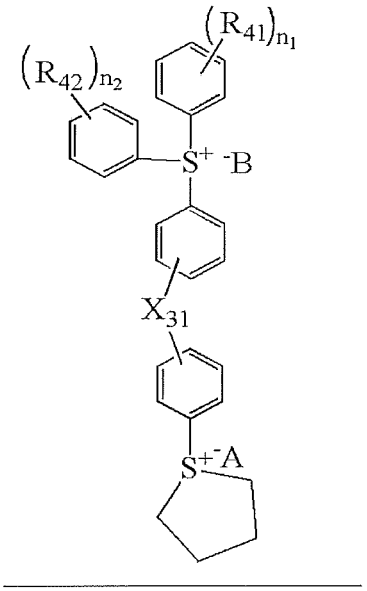
What is claimed is:

1. A sulfonium compound represented by the following formulas:

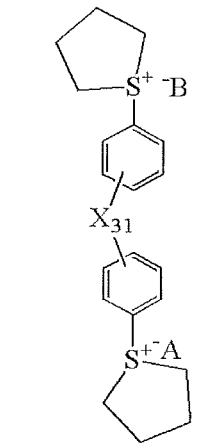
[Chemical Formula 4-1]



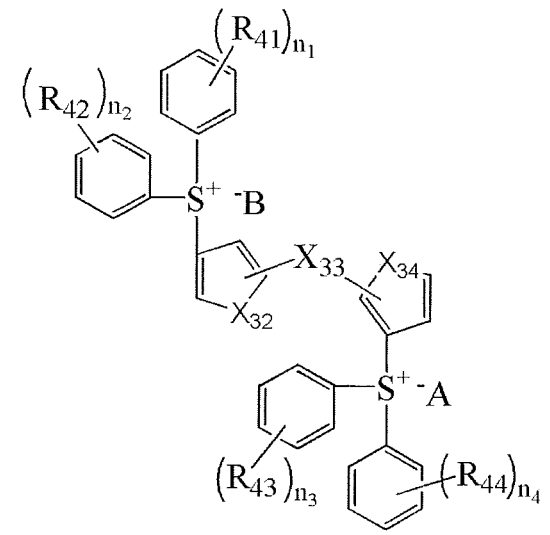
[Chemical Formula 4-2]



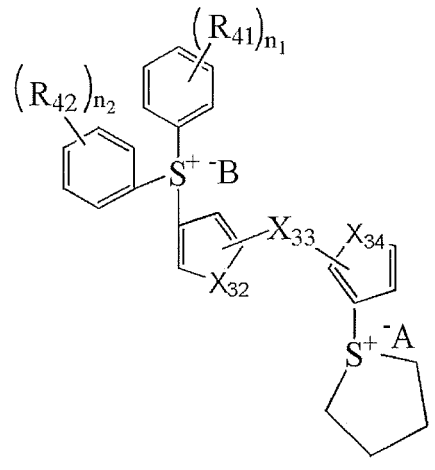
[Chemical Formula 4-3]



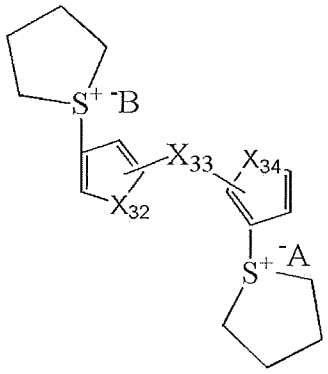
[Chemical Formula 4-4]



[Chemical Formula 4-5]



[Chemical Formula 4-6]



wherein in the formulas (4-1) to (4-6),

X_{31} represents any one selected from the group consisting of -O-, -S-, $-OCH_2-$, $-OCH_2O-$, $-OCH_2CH_2O-$, $-O(C_6H_4)O-$, $-CH_2SCH_2-$ and $-S(C_6H_4)S-$;

X_{32} and X_{34} each independently represent any one selected from the group consisting of -O- and -S-;

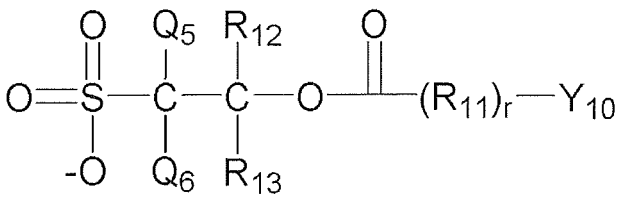
X_{33} represents any one selected from the group consisting of -O-, -S-, $-OCH_2-$, $-OCH_2O-$, $-OCH_2CH_2O-$ and $-CH_2SCH_2-$;

R_{41}, R_{42}, R_{43} and R_{44} each independently represent any one selected from the group consisting of a hydrogen atom, an alkyl group having 1 to 5 carbon atoms, and a halogenated alkyl group having 1 to 5 carbon atoms;

n_1, n_2, n_3 and n_4 each independently represent an integer from 1 to 5; and

A^- and B^- represent anions that are different from each other, and wherein the anions A^- and B^- each independently represent any one selected from the group consisting of $OSO_2CF_3^-$, $OSO_2C_4F_9^-$, $OSO_2C_8F_{17}^-$, $N(CF_3)_2^-$, $N(C_2F_5)_2^-$, $N(C_4F_9)_2^-$, $C(CF_3)_3^-$, $C(C_2F_5)_3^-$, $C(C_4F_9)_3^-$ and a compound represented by the following formula (1-4):

[Chemical Formula 1-4]



wherein in the formula (1-4),

Y_{10} represents any one selected from the group consisting of a cycloalkyl group, a heterocycloalkyl group, an aryl group, a heteroaryl group, an alkyl group, a heteroalkyl group, an allyl group, a perfluoroalkyl group, a haloalkyl group and an alkylsulfonyl group;

R_{11} represents any one selected from the group consisting of an alkanediyl group, an alkenediyl group, NR', S, O, CO and combinations thereof, while R' represents any one selected from the group consisting of a hydrogen atom and an alkyl group;

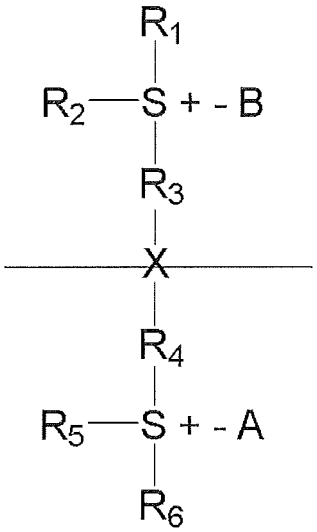
R_{12} and R_{13} each independently represent any one selected from the group consisting of a hydrogen atom and an alkyl group having 1 to 8 carbon atoms;

r represents an integer from 0 to 5; and

Q_5 and Q_6 each independently represent a halogen atom.

~~A sulfonium compound represented by the following formula (1):~~

~~[Chemical Formula 1]~~



~~wherein X represents an electron-donating group;~~

~~R_1 and R_2 each independently represent any one selected from the group consisting of an alkyl group, a cycloalkyl group, an aryl group, a heteroalkyl group, a heterocycloalkyl group and a heteroaryl group, or R_1 and R_2 may be joined, together with the sulfur atom to which R_1 is bonded, to form a heterocycloalkyl group having 2 to 7 carbon atoms;~~

~~R_3 and R_4 each independently represent any one selected from the group consisting of an arylene group and a heteroarylene group;~~

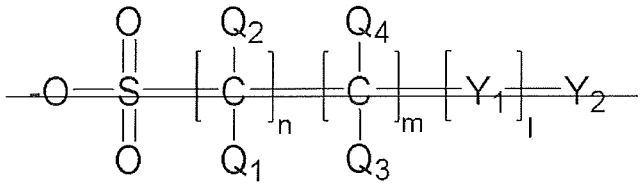
R_5 and R_6 each independently represent any one selected from the group consisting of an alkyl group, a cycloalkyl group, an aryl group, a heteroalkyl group, a heterocycloalkyl group and a heteroaryl group, or R_5 and R_6 may be joined, together with the sulfur atom to which R_5 is bonded, to form a heterocycloalkyl group having 2 to 7 carbon atoms; and

A^- and B^- represent anions that are different from each other.

2. The sulfonium compound according to claim 1, wherein the anions A^- and B^- each independently represent any one selected from the group consisting of a sulfonate anion, an imide anion, a methide anion, an alkyl halide anion, a carboxylate anion, an iodonium anion and a sulfonylimide anion.

3. The sulfonium compound according to claim 1, wherein the anions A^- and B^- each independently represent any one selected from the group consisting of compounds represented by the following formulas (1-1), (1-2) and (1-3):

[Chemical Formula 1-1]



wherein in the formula (1-1),

Q_1, Q_2, Q_3 and Q_4 each independently represent any one selected from the group consisting of a hydrogen atom, a halogen atom and an alkyl group;

Y_1 represents any one selected from the group consisting of an alkanediyl group, an alkenediyl group, NR', S, O, CO and combinations thereof, while R' represents any one selected from the group consisting of a hydrogen atom and an alkyl group;

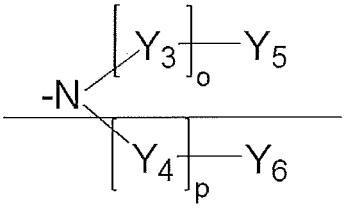
Y_2 represents any one selected from the group consisting of a hydrogen atom, an alkyl group, a heterocycloalkyl group, an aryl group, a heteroaryl group, an alkyl group, a heteroalkyl group, an allyl group, a perfluoroalkyl group, a haloalkyl group and an alkylsulfonyl group;

n represents an integer from 0 to 10;

m represents an integer from 0 to 10; and

l represents an integer from 0 to 5;

~~[Chemical Formula 1-2]~~



~~wherein in the formula (1-2),~~

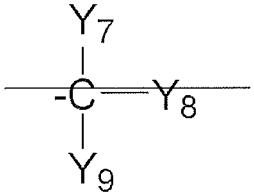
~~Y_3 and Y_4 each independently represent any one selected from the group consisting of an alkanediyl, an alkenediyl, NR', S, O, CO, O_2S and combinations thereof, while R' represents any one selected from the group consisting of a hydrogen atom and an alkyl group;~~

~~Y_5 and Y_6 each independently represent any one selected from the group consisting of a hydrogen atom, an alkyl group, a heterocycloalkyl group, an aryl group, a heteroaryl group, an alkyl group, a heteroalkyl group, an allyl group, a perfluoroalkyl group, a haloalkyl group and an alkylsulfonyl group;~~

~~o represents an integer from 0 to 5; and~~

~~p represents an integer from 0 to 5; and~~

~~[Chemical Formula 1-3]~~



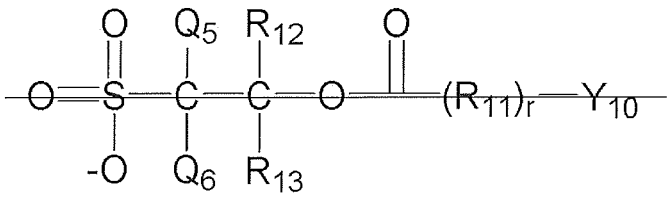
~~wherein in the formula (1-3),~~

~~Y_7, Y_8 and Y_9 each independently represent any one selected from the group consisting of a hydrogen atom, an alkyl group, a heterocycloalkyl group, an aryl group, a heteroaryl group, an alkyl group, a heteroalkyl group, an allyl group, a perfluoroalkyl group, a haloalkyl group and an alkylsulfonyl group~~.

4. ~~The sulfonium compound according to claim 1, wherein the anions A^- and B^- each independently represent any one selected from the group consisting of $OSO_2CF_3^-$, $OSO_2C_4F_9^-$, $OSO_2C_8F_{17}^-$, $N(CF_3)_2^-$, $N(C_2F_5)_2^-$, $N(C_4F_9)_2^-$, $C(CF_3)_3^-$, $C(C_2F_5)_3^-$, $C(C_4F_9)_3^-$ and a compound~~

~~represented by the following formula (1-4):~~

~~[Chemical Formula 1-4]~~



~~wherein in the formula (1-4),~~

~~Y_{10} represents any one selected from the group consisting of a cycloalkyl group, a heterocycloalkyl group, an aryl group, a heteroaryl group, an alkyl group, a heteroalkyl group, an allyl group, a perfluoroalkyl group, a haloalkyl group and an alkylsulfonyl group;~~

~~R_{11} represents any one selected from the group consisting of an alkanediyl group, an alkenediyl group, NR', S, O, CO and combinations thereof, while R' represents any one selected from the group consisting of a hydrogen atom and an alkyl group;~~

~~R_{12} and R_{13} each independently represent any one selected from the group consisting of a hydrogen atom and an alkyl group having 1 to 8 carbon atoms;~~

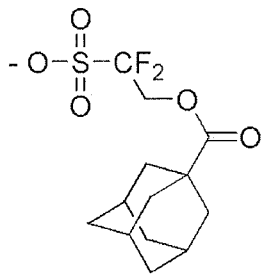
~~r represents an integer from 0 to 5; and~~

~~Q_5 and Q_6 each independently represent a halogen atom~~.

~~5~~2. The sulfonium compound according to claim 1, wherein the anion A- represents any one selected from the group consisting of $OSO_2CF_3^-$, $OSO_2CF_2CF_2CF_2CF_3^-$ and an anionic moiety represented by the following formula (1-5), and

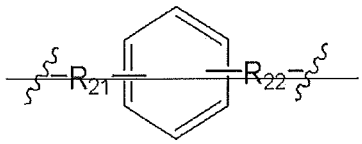
the anion B- represents any one selected from the group consisting of $OSO_2CF_3^-$, $OSO_2CF_2CF_2CF_2CF_3^-$ and an anionic moiety represented by the following formula (1-5):

[Chemical Formula 1-5]

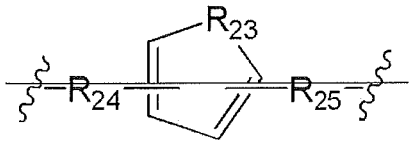


~~6. The sulfonium compound according to claim 1, wherein R_3 and R_4 each independently represent any one selected from the group consisting of groups represented by the following formulas (2-1) and (2-2):~~

~~[Chemical Formula 2-1]~~



~~[Chemical Formula 2-2]~~



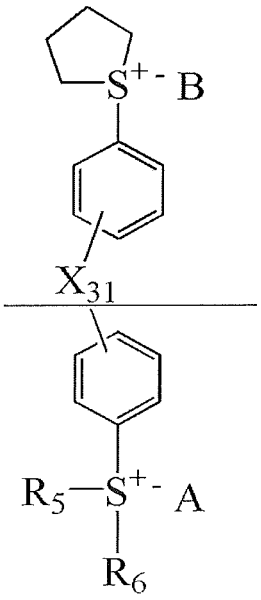
~~wherein in the formula (2-1) and formula (2-2),~~

~~R_{21}, R_{22}, R_{24} and R_{25} each independently represent any one selected from the group consisting of a single bond, an alkanediyl group having 1 to 5 carbon atoms, and an alkenediyl group having 2 to 5 carbon atoms; and R23 represents any one selected from the group consisting of -O- and -S-.~~

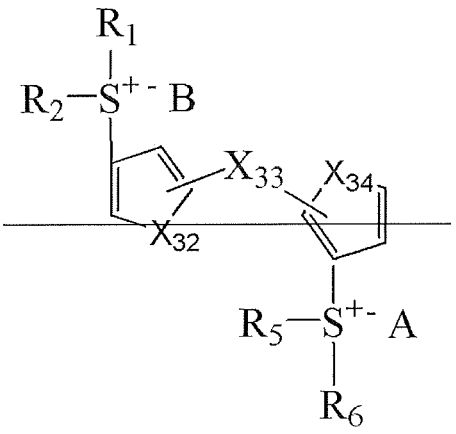
~~7. The sulfonium compound according to claim 1, wherein the electron-donating group is any one selected from the group consisting of -O-, -S-, $-OCH_2-$, $-OCH_2O-$, $-OCH_2CH_2O-$, $-O(C_6H_4)O-$, $-CH_2SCH_2-$ and $-S(C_6H_4)S-$.~~

~~8. The sulfonium compound according to claim 1, wherein the sulfonium compound represented by the formula (1) is any one selected from the group consisting of compounds represented by the following formula (3-1), formula (3-2) and formula (3-3):~~

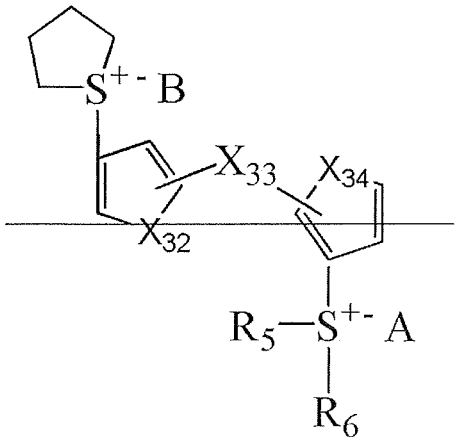
~~[Chemical Formula 3-1]~~



~~[Chemical Formula 3-2]~~



~~[Chemical Formula 3-3]~~



wherein in the formulas (3-1) to (3-3),

X_{31} represents any one selected from the group consisting of -O-, -S-, $-OCH_2-$, $-OCH_2O-$, $-OCH_2CH_2O-$, $-O(C_6H_4)O-$, $-CH_2SCH_2-$ and $-S(C_6H_4)S-$;

X_{32} and X_{34} each independently represent any one selected from the group consisting of -O- and -S-;

X_{33} represents any one selected from the group consisting of -O-, -S-, $-OCH_2-$, $-OCH_2O-$, $-OCH_2CH_2O-$, $-CH_2SCH_2-$ and $-CH_2SCH_2-$;

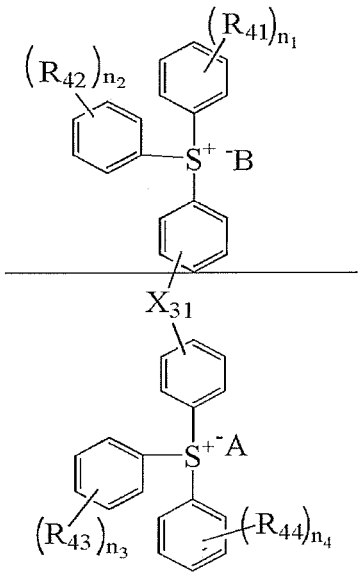
R_1 and R_2 each independently represent any one selected from the group consisting of an alkyl group, a cycloalkyl group, an aryl group, a heteroalkyl group, a heterocycloalkyl group, and a heteroaryl group;

R_5 and R_6 each independently represent any one selected from the group consisting of an alkyl group, a cycloalkyl group, an aryl group, a heteroalkyl group, a heterocycloalkyl group and a heteroaryl group, or R_5 and R_6 may be joined, together with the sulfur atom to which R_5 is bonded, to form a heterocycloalkyl group having 2 to 7 carbon atoms; and

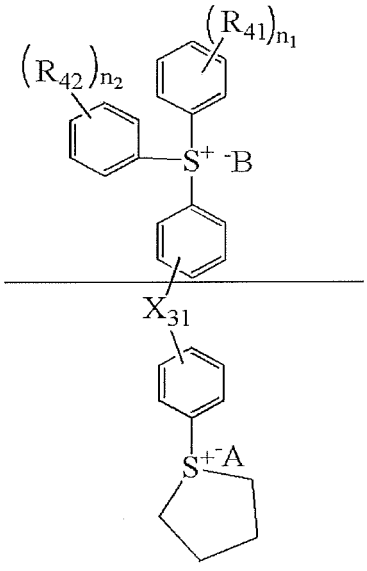
A^- and B^- represent anions that are different from each other.

9. The sulfonium compound according to claim 1, wherein the sulfonium compound represents any one selected from the group consisting of compounds represented by the following formulas (4-1) to formula (4-6):

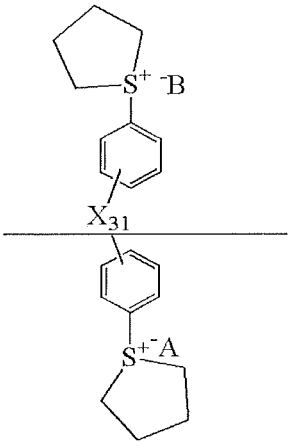
[Chemical Formula 4-1]



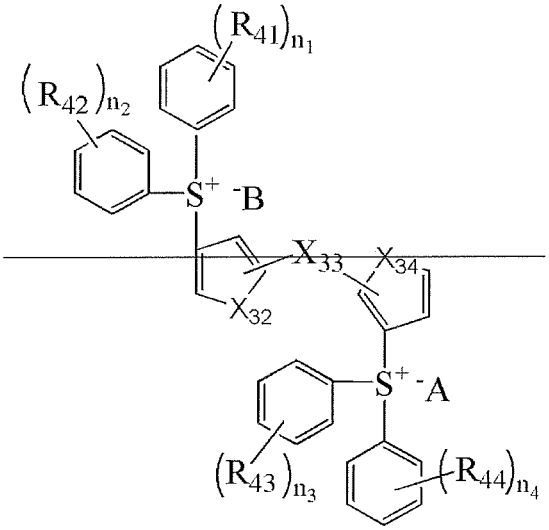
[Chemical Formula 4-2]



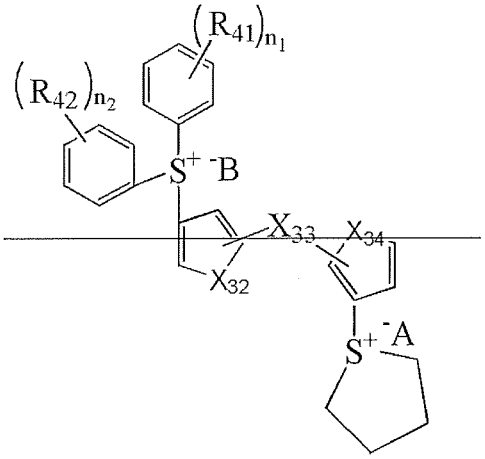
[Chemical Formula 4-3]



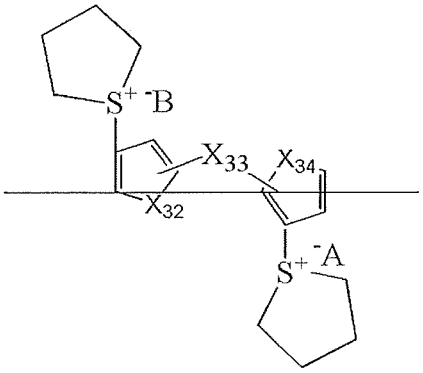
~~[Chemical Formula 4-4]~~



~~[Chemical Formula 4-5]~~



~~[Chemical Formula 4-6]~~



~~wherein in the formulas (4-1) to (4-6),~~

~~X_{31} represents any one selected from the group consisting of -O-, -S-, $-OCH_2-$, $-OCH_2O-$, $-OCH_2CH_2O-$, $-O(C_6H_4)O-$, $-CH_2SCH_2-$ and $-S(C_6H_4)S-$;~~

~~X_{32} and X_{34} each independently represent any one selected from the group consisting of -O- and -S-;~~

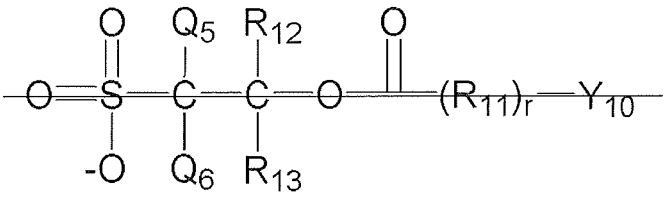
~~X_{33} represents any one selected from the group consisting of -O-, -S-, $-OCH_2-$, $-OCH_2O-$, $-OCH_2CH_2O-$ and $-CH_2SCH_2-$;~~

~~R_{41}, R_{42}, R_{43} and R_{44} each independently represent any one selected from the group consisting of a hydrogen atom, an alkyl group having 1 to 5 carbon atoms, and a halogenated alkyl group having 1 to 5 carbon atoms;~~

~~n_1, n_2, n_3 and n_4 each independently represent an integer from 1 to 5; and~~

~~A^- and B^- represent anions that are different from each other, and wherein the anions A^- and B^- each independently represent any one selected from the group consisting of $OSO_2CF_3^-$, $OSO_2C_4F_9^-$, $OSO_2C_8F_{17}^-$, $N(CF_3)_2^-$, $N(C_2F_5)_2^-$, $N(C_4F_9)_2^-$, $C(CF_3)_3^-$, $C(C_2F_5)_3^-$, $C(C_4F_9)_3^-$ and a compound represented by the following formula (1-4):~~

~~[Chemical Formula 1-4]~~



~~wherein in the formula (1-4),~~

~~Y_{10} represents any one selected from the group consisting of a cycloalkyl group, a heterocycloalkyl group, an aryl group, a heteroaryl group, an alkyl group, a heteroalkyl group, an allyl group, a perfluoroalkyl group, a haloalkyl group and an alkylsulfonyl group;~~

~~R_{11} represents any one selected from the group consisting of an alkanediyl group, an alkenediyl group, NR', S, O, CO and combinations thereof, while R' represents any one selected from the group consisting of a hydrogen atom and an alkyl group;~~

~~R_{12} and R_{13} each independently represent any one selected from the group consisting of a hydrogen atom and an alkyl group having 1 to 8 carbon atoms;~~

~~r represents an integer from 0 to 5; and~~

~~Q_5 and Q_6 each independently represent a halogen atom.~~

~~10~~ 3. A photo-acid generator comprising the sulfonium compound according to any one of claims 1 and 2 ~~to 9.~~

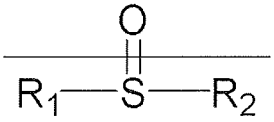
~~11. A method for producing a sulfonium compound, the method comprising:~~

~~a first step of allowing a compound represented by the following formula (10) to react with a compound represented by the following formula (11), and thereby producing a compound represented by the following formula (12);~~

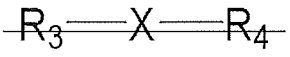
~~a second step of allowing the compound represented by the formula (12) to react with a compound represented by the following formula (13), and thereby producing a compound represented by the following formula (14); and~~

~~a third step of allowing the compound represented by the formula (14) to react with a compound represented by the following formula (15), and thereby producing a compound represented by the following formula (1):~~

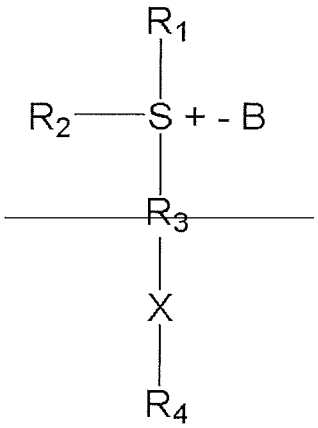
~~[Chemical Formula 10]~~



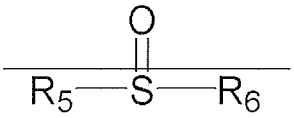
~~[Chemical Formula 11]~~



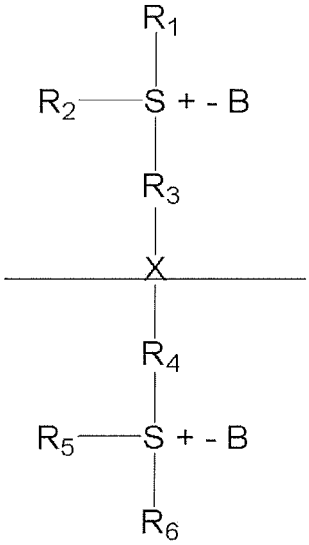
~~[Chemical Formula 12]~~



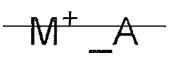
~~[Chemical Formula 13]~~



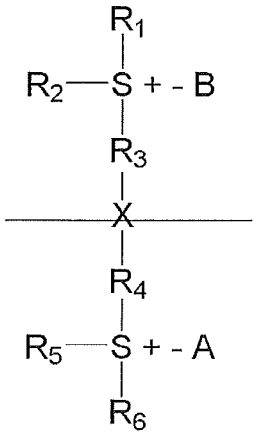
~~[Chemical Formula 14]~~



~~[Chemical Formula 15]~~



~~[Chemical Formula 1]~~



~~wherein in the formulas (1) and (10) to (15),~~

~~X represents an electron-donating group;~~

~~R_1 and R_2 each independently represent any one selected from the group consisting of an alkyl group, a cycloalkyl group, an aryl group, a heteroalkyl group, a heterocycloalkyl group and a heteroaryl group, or R_1 and R_2 may be joined, together with the sulfur atom to which R_1 is bonded, to form a heterocycloalkyl group having 2 to 7 carbon atoms;~~

~~R_3 and R_4 each independently represent any one selected from the group consisting of an arylene group and a heteroarylene group;~~

~~R_5 and R_6 each independently represent any one selected from the group consisting of an alkyl group, a cycloalkyl group, an aryl group, a heteroalkyl group, a heterocycloalkyl group and a heteroaryl group, or R_5 and R_6 may be joined, together with the sulfur atom to which R_5 is bonded, to form a heterocycloalkyl group having 2 to 7 carbon atoms;~~

~~A^- and B^- represent anions that are different from each other; and~~

~~M represents any one selected from~~ the group consisting of lithium (Li), sodium (Na), potassium (K) and silver (Ag).