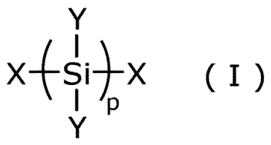
CLAIMS

1. A method for producing an amorphous silicon film comprising:

(a) applying an amorphous silicon forming composition above a substrate to form a coating film, wherein the composition comprises:

a polysilane represented by formula (I):



(I)

wherein

p is a number of 5 to 1,000,

X is each independently selected from the group consisting of a hydrogen atom, a halogen atom, and substituted or unsubstituted amino group,

Y is each independently selected from the group consisting of a single bond, a hydrogen atom, a halogen atom, $-SiZ_3$, and substituted or unsubstituted amino group, where neither of Y which are bonded to adjacent silicon atoms is a single bond,

Z is each independently selected from the group consisting of a single bond, a hydrogen atom, and a halogen atom,

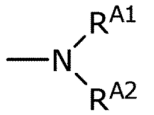
when Y or Z is a single bond, the single bond with another single bond connects silicon atoms to which the single bonds are bonded,

provided that one or more of all X and Y is substituted or unsubstituted amino group; and

a solvent; and

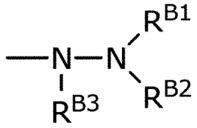
(b) heating the coating film in a non-oxidizing atmosphere, wherein the heating is performed at 200 to 1,000°C.

2. The method according to claim 1, wherein the amino group is the group represented by the formula (A) or (B):



(A)

wherein R^{A1} and R^{A2} are each independently a hydrogen atom or C_{1-12} alkyl group,



(B)

wherein

R^{B1} and R^{B2} are each independently a hydrogen atom or C_{1-12} alkyl group, and

R^{B3} is independently a hydrogen atom or C_{1-4} alkyl group.

3. The method according to claim 1 or 2, wherein the amino group is dialkylamino group.

4. The method according to any one of claims 1 to 3, wherein the amino group is selected from the group consisting of di-n-butylamino group, diisobutylamino group, di-sec-butylamino group, diisopropylamino group, di-n-propylamino group, diethylamino group and dimethylamino group.

5. The method according to any one of claims 1 to 4, wherein one or more Y is amino group.

6. The method according to any one of claims 1 to 5, wherein the mass average molecular weight of the polysilane is 200 to 25,000 measured by ger permeation chromatography in terms of polystyrene.

7. The method according to any one of claims 1 to 6, wherein the ratio of the number of N atoms to the number of Si atoms containing in the polysilane molecule is 0.1 to 40%.

8. The method according to any one of claims 1 to 7, wherein the relative dielectric constant of the solvent is 3.0 or less.

9. An electronic device manufactured by the method according to claim 1.