Patent Claims

1. A method for manufacturing a resist pattern comprising the following steps:
(1) applying a photosensitive resin composition on a substrate with or without one or more intervening layers, to form a photosensitive resin layer;
(2) exposing the photosensitive resin layer to radiation;
(3) developing the exposed photosensitive resin layer; and
(4) cleaning the developed layer with an electronic device manufacturing aqueous solution,
wherein the electronic device manufacturing aqueous solution comprises:
an alkylcarboxylic acid compound (A); and
a solvent (B),
wherein
the alkylcarboxylic acid compound (A) is represented by the formula (a):

A_1-COOH (a)

where A_1 is C_{3-12} alkyl, preferably A_1 is linear or branched C_{3-10} alkyl, and
the solvent (B) comprises water.

2. The method for manufacturing a resist pattern according to claim 1, wherein the electronic device manufacturing aqueous solution further comprises a nitrogen-containing compound (C).

3. The method for manufacturing a resist pattern according to claim 1 or 2, wherein the content of the alkylcarboxylic acid compound (A) is 0.01 to 10 mass %, based on the electronic device manufacturing aqueous solution:
preferably, the content of the solvent (B) is 80 to 99.99 mass %, based on the electronic device manufacturing aqueous solution;
preferably, the content of water contained in the solvent (B) is 80 to 99.99 mass %, based on the electronic device

manufacturing aqueous solution; or
preferably, the content of the nitrogen-containing compound (C) is 0.0001 to 10 mass %, based on the electronic device manufacturing aqueous solution.

4. The method for manufacturing a resist pattern according to one or more of claims 1 to 3, wherein the electronic device manufacturing aqueous solution further comprises a hydroxy-containing compound (D):
preferably, a surfactant (E) is further comprised.

5. The method for manufacturing a resist pattern according to one or more of claims 1 to 4, wherein the electronic device manufacturing aqueous solution further comprises an additive (F),
wherein
the additive (F) comprises an acid, a base, a germicide, an antibacterial agent, a preservative, a fungicide, or any combination of any of these;
preferably, the content of the hydroxy-containing compound (D) is 0.001 to 10 mass %, based on the electronic device manufacturing aqueous solution;
preferably, the content of the surfactant (E) is 0.01 to 5 mass %, based on the electronic device manufacturing aqueous solution; or
preferably, the content of the additive (F) is 0.0001 to 10 mass %, based on the electronic device manufacturing aqueous solution.

6. The method for manufacturing a resist pattern according to one or more of claims 1 to 5, which is a semiconductor manufacturing aqueous solution:
preferably, the electronic device manufacturing aqueous solution is a semiconductor substrate manufacturing aqueous solution;
preferably, the electronic device manufacturing aqueous solution is a semiconductor substrate manufacturing process cleaning

liquid;
preferably, the electronic device manufacturing aqueous solution is a lithography cleaning liquid; or
preferably, the electronic device manufacturing aqueous solution is a resist pattern cleaning liquid.

7. A method for manufacturing a resist pattern using the electronic device manufacturing aqueous solution according to one or more of claims 1 to 6.

8. The method for manufacturing a resist pattern according to claim 7, wherein the photosensitive resin composition is a chemically amplified photosensitive resin composition, and preferably, exposure is performed using extreme ultraviolet ray.

9. The method for manufacturing a resist pattern according to one or more of claims 7 to 8, wherein the minimum space size of the resist pattern in one circuit unit is 10 to 30 nm.

10. A method for manufacturing a device, comprising the method for manufacturing a resist pattern according to one or more of claims 7 to 9.

11. The method for manufacturing a device according to claim 10, further comprising etching using the resist pattern manufactured by the method according to one or more of claims 7 to 9 as a mask, and processing a substrate.

12. The method for manufacturing a device according to claim 10 or 11, further comprising forming a wiring on a processed substrate.