CLAIMS

1. A film formation method, comprising the steps of:

forming a catalyst film on a surface of a substrate by substitution reduction plating;

forming a palladium plating film as an intermediate film on the catalyst film; and

forming a gold plating film as a surface film on the palladium plating film,

wherein the catalyst film is a platinum film.

2. The film formation method of claim 1, wherein the substrate includes a copper circuit.

3. The film formation method of claim 1 or 2, wherein the step of forming the catalyst film is conducted by using a substitution reduction plating bath including a water-soluble metal compound, a chelating agent, and a reducing agent.

4. The film formation method of claim 3, wherein

the catalyst film is a platinum film,

the water-soluble metal compound is at least one of dinitrodiammineplatinum, chloroplatinates, tetraammine platinum salts, or hexaammine platinum salts, and

the reducing agent is at least one of formic acid, hydrazine, ascorbic acid, or dimethylamineborane.

5. The film formation method of any one of claims 1 to 4, wherein the palladium plating film is a pure palladium film not including phosphorus.