CLAIMS

1. Composite copper nanoparticles in which a surface of copper nanoparticles is modified with a silane coupling agent,

wherein the copper nanoparticles have a film containing cuprous oxide and copper carbonate on at least a part of the surface thereof,

wherein when a total mass of the composite copper nanoparticles is 100% by mass, a mass carbon concentration is in a range from 0.5 to 1.5% by mass,

wherein a mass carbon concentration caused by the silane coupling agent in the mass carbon concentration is in a range from 0.5 to 1.2% by mass, and

wherein when a total mass of the composite copper nanoparticles is 100% by mass, a mass silicon concentration is in a range from 0.05 to 0.11% by mass.

2. The composite copper nanoparticles according to Claim 1, wherein a mass carbon concentration caused by the copper nanoparticles in the mass carbon concentration is 0.3% by mass or less.

3. The composite copper nanoparticles according to Claim 1 or 2, wherein the silane coupling agent has an alkyl chain having 10 or more carbon atoms.

4. The composite copper nanoparticles according to any one of Claims 1 to 3, wherein an average particle diameter of the copper nanoparticles is 200 nm or less.

5. A method for producing composite copper nanoparticles by modifying the surface of the copper nanoparticles with a silane coupling agent,

the method comprising:

preparing copper nanoparticles having a film containing cuprous oxide and copper carbonate on at least a part of the surface;

obtaining a dispersion liquid by feeding a mixture of the copper nanoparticles and an organic solvent into a narrow channel under pressure, and dispersing the mixture by collision and shear force; and

adding a silane coupling agent into the dispersion liquid.

6. The method for producing composite copper according to Claim 5,

wherein an amount of the silane coupling agent added is 0.6 to 1.25 times an amount equivalent to forming a monolayer film on the surface of the copper nanoparticles.