Claims

1. A producing apparatus for obtaining a product different from a raw material by treating a raw material containing metal atoms with plasma comprising:

a microwave generator which generates microwaves to be supplied into a reaction chamber,

a gas supplier which supplies a reactive gas substantially free of oxygen atoms in the reaction chamber,

a raw material supplier that supplies the raw material into the reaction chamber,

a decompressor that decompresses the reaction chamber,

a depositer which deposits thereon the product and is disposed within a range where the generated plasma exists, and

a temperature controller which keeps the surface temperature of a surface of the depositer for depositing the product within a predetermined temperature range suitable for precipitation of the product,

wherein the raw material supplier comprises:

a raw material storage unit which stores the raw materials, and

a raw material supply pipe which supplies vaporized raw material in the raw material storage unit into the reaction chamber.

2. The producing apparatus according to claim 1, wherein the raw material supplier comprises a first heating unit that heats the raw material storage unit and the raw material supply pipe.

3. The producing apparatus according to claim 1 or 2, further comprising a window made of a dielectric material provided in a portion where the microwave is incident into the reaction chamber.

4. The producing apparatus according to any one of claims 1 to 3, further comprising a heater which heats the reaction chamber.