CLAIMS

1. A method for the continuous production of an inorganic oxide in a form of a thin film, the method comprising

a step of bringing a first liquid and a second liquid into contact with each other, wherein at least one of the liquids is moving relative to the other during the contact the first liquid having an inorganic oxide precursor which includes a metal alkoxide dissolved therein, the second liquid phase-separating from the first liquid and having a substance dissolved therein, and the substance reacting with the inorganic oxide precursor of the first liquid to form an inorganic oxide derived from the inorganic oxide precursor,

wherein a segment size of the first liquid at a time of contact between the first and second liquids is 500 μm or smaller.

2. The method of claim 1, wherein

the mode of contact between the first and second liquids includes a mode of supplying transported one of the first and second liquids with another to bring the first and second liquids into contact with each other.

3. The method of claim 1 or claim 2, wherein

the mode of contact between the first and second liquids includes a mode of supplying flowing one of the first and second liquids with another to bring the first and second liquids into contact with each other.

4. The method of claim 3, wherein

the mode of contact between the first and second liquids includes a mode of

allowing both of the first and second liquids to flow and join together.

5. The method of claim 4, wherein

a manner of supplying one of the first and second liquids with another is a manner of allowing both of the first and second liquids to flow out of slits and join together.

6. The method of claim 4, wherein

the mode of contact between the first and second liquids includes a mode of allowing both of the first and second liquids to flow in a same flow direction, and, while maintaining the flow direction, bringing the first and second liquids into contact with each other.

7. The method of claim 6, wherein

the manner of supplying one of the first and second liquids with another is a manner of allowing the one to flow between an inner pipe and an outer pipe of a double pipe while allowing the other to flow through the inner pipe, and causing the one and the other to join together so as to cover the other with the one.

8. The method of any one of claims 4 to 7, wherein

when both of the first and second liquids are allowed to flow, a ratio of a linear flow velocity of the first liquid to a linear flow velocity of the second liquid at a time of contact between the first liquid and the second liquid is 0.01 or more and 100 or less.

9. The method of any one of claims 1 to 8, wherein, when the second liquid is allowed to flow, a Reynolds number of the second liquid until a time when the first and second liquids come into contact with each other is 0.01 or more and 500 or less.

10. The method of any one of claims 1 to 9, wherein

a segment size of the second liquid at the time of contact between the first liquid and the second liquid is 5 mm or smaller.

11. The method of any one of claims 1 to 10, wherein

a ratio of the segment size of the second liquid to the segment size of the first liquid at the time of contact between the first and second liquids is 0.1 or more and 500 or less.

12. The method of any one of claims 1 to 11, wherein

a solvent of the first liquid includes one or two or more of toluene, hexane, heptane, benzene, and chloroform.

13. The method of any one of claims 1 to 12, wherein

an interfacial tension of the first liquid to the second liquid at a temperature at the time of contact between the first liquid and the second liquid is 0.1 mN/m or more and 30 mN/m or less.

14. The method of any one of claims 1 to 13, wherein

a duration of contact between the first and second liquids is 0.5 sec or longer and 600 sec or shorter.

15. The method of any one of claims 1 to 14, wherein

a reaction temperature at the time of contact between the first and second liquids is 10 °C or higher and 60 °C or lower.

16. The method of any one of 1 to 15, wherein

an average thickness of the inorganic oxide in the form of the thin film is 0.01 μm or larger and 1.5 μm or smaller.

17. The method of any one of 1 to 16, wherein

a ratio of an average longitudinal diameter to the average thickness of the inorganic oxide in the form of the film is 5 or more and 2000 or less.