

Method for producing Gallium oxide

Low-cost, low-temperature, and simple manufacturing processes

Overview

γ -Gallium oxide (γ -Ga₂O₃) is one of the metastable structures of gallium oxide and has excellent catalytic properties. However, it was difficult to be synthesized. In the conventional method for producing γ -Ga₂O₃, gallium nitrate hydrate was dissolved in distilled water with urea and baked at 500°C. However, this method required a facility for high-temperature treatment and had a problem of increasing production costs such as equipment costs.

The present invention makes it possible to provide a method for producing gallium oxide at a low temperature and a simple process, thereby reducing production costs.

It is characterized in that a raw material solution containing liquid gallium and a reducing agent is irradiated with ultrasonic waves. Thus, particles of gallium can be refined, and particles having crystals of γ -Ga₂O₃ can be formed on the surface thereof. As a result, the baking process and the complicated separation and cleaning process are not required, the manufacturing cost is reduced, and γ -Ga₂O₃ can be produced by a simple process at a low temperature.

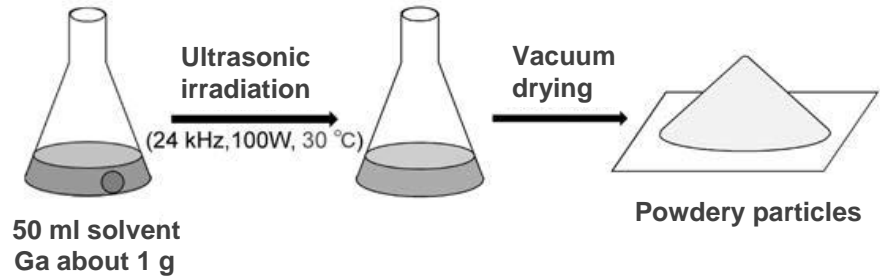
Product Application

- Wide-gap semiconductor
- Power device

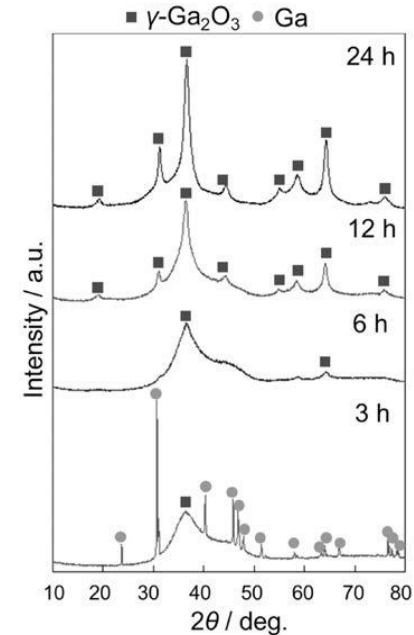
IP Data

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Features · outstandings



γ -Ga₂O₃ was produced by simple process



XRD pattern : Synthesis of γ -Ga₂O₃ is confirmed

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