Tohoku Univ. Technology

Method for producing Gallium oxide

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

Overview

γ-Gallium oxide (γ-Ga_2O_3) 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-Ga_2O_3, gallium nitrate hydrate was dissolved in distilled water with urea and baked at 500ºC. 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-Ga_2O_3 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-Ga_2O_3 can be produced by a simple process at a low temperature.

Product Application

- Wide-gap semiconductor
- Power device

IP Data

IP No.	:	JPA2021-66636
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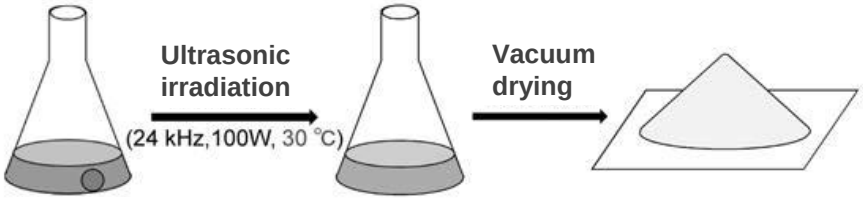
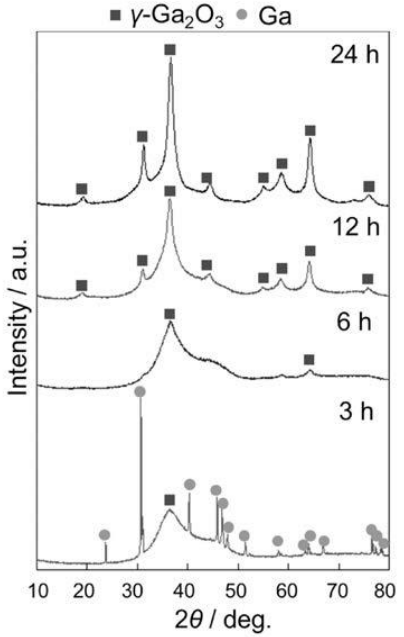
Admin No.	:	T19-388

Features・outstandings



γ-Ga_2O_3 was produced by simple process



XRD pattern : Synthesis of γ-Ga_2O_3 is confirmed

Contact

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