

The growth of ZnO nanostructures prepared by anodization in combination with hydrothermal method on the Zn sheet

ZnO nanostructures prepared by anodization in combination with hydrothermal method using Zn metal plate in water vapor were investigated. In the first step, the Zn nanoporous were fabricated by electrochemical anodization in a HF/Methanol/H₂O electrolyte system. Ultrasonic wave was used to clean the surface of ZnO nanoporous in the medium of water after the completion of the anodization. After drying in air, in the second step, the nanostructures were converted by hydrothermal. The ZnO nanostructures were characterized by X-ray diffraction (XRD) and scanning electron microscopy (SEM). XRD patterns show the ZnO hexagonal wurtzite structure. SEM images indicate that the ZnO structures depend on preparation temperatures. The density of ZnO nanostructures increase as the times increases. The growth of ZnO nanostructures was observed to be times dependence

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Author: Dr MEKLA, Vatcharinkorn (Ubon Ratchathani Rajabhat University)

Co-author: Ms JOONGPO, Kannika (Ubon Ratchathani Rajabhat University)

Presenter: Ms JOONGPO, Kannika (Ubon Ratchathani Rajabhat University)

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