

## Room-temperature synthesis of needle-shaped ZnO nanorods via sonochemical method

Wahab Rizwan, S. G. Ansari, 김영순, M. A. Dar, 서형기, 김길성, 신형식\*

전북대학교

(hsshin@chonbuk.ac.kr\*)

High density and well-crystallized needle-shaped zinc oxide nanorods were synthesized via sonochemical methods using 0.2M zinc acetate dihydrate and 10g sodium hydroxide in 100ml distilled water and stirred the solution for 10 minute for the proper dissolution at room temperature and sonicate the for 2 hours. Morphological investigation by FESEM reveals that as-grown nanorods are possessing hexagonal surfaces passim to their length with the blunt facets. The typical diameter and length of as grown product varies from 120-160 nm and 3-5 $\mu$ m, respectively. Detailed structural characterization confirmed that the as grown nanorods are single crystalline in nature and possesses a wurtzite hexagonal phase. The FTIR spectrum shows the standard peak of zinc oxide at 520  $\text{cm}^{-1}$ . The UV visible and room-temperature PL spectrum demonstrate that the as-synthesized nanorods have good optical properties.