

기상증착법을 이용한 산화아연 나노로드의 성장  
Growth of ZnO nanorods by vapor-solid method

김나리, 김재수\*, 변동진, 노대호, 진정근, 양재웅\*\*  
고려대학교 재료공학과, \*한국과학기술연구원, \*\*대진대학교  
(monika81@kist.re.kr)

In recent years, there has been increasing interest in quasi one-dimensional nanostructural systems, because of their numerous potential applications in various areas, such as materials sciences, electronics, optics, magnetism and energy storage. Specifically, zinc oxide (ZnO) is recognized as one of the most promising oxide semiconductor materials, because of its good optical, electrical, and piezoelectrical properties. The ZnO nanorods were synthesized using vapor-solid (VS) mechanism on soda lime glass substrate without the presence of metal catalyst. ZnO nanorods were prepared thermal evaporation of a Zn powder at 500 . As-fabricated ZnO nanorods had an average diameter and length of 40nm and 3 $\mu$ m. Transmission electron microscopy revealed that the ZnO nanorods were single crystalline with the growth direction perpendicular to the (101) lattice plane. The influences of reaction time on the formation of the ZnO nanorods were investigated. The Photoluminescence measurements showed that the ZnO nanorods had a strong ultraviolet emission at around 380nm and a green emission at around 500nm.