

### Formation of BaTiO<sub>3</sub> nanoparticles in supercritical water

안기호, 김민수<sup>1</sup>, 윤용석<sup>1</sup>, 이윤우<sup>1,\*</sup>  
서울대학교 화학생물공학부; <sup>1</sup>서울대학교  
(ywlee@snu.ac.kr\*)

Barium titanate is one of the most used perovskite structured materials in electronics industry due to its outstanding dielectric property. In this study, barium titanate nanoparticles were prepared using hydrothermal method using supercritical water for its simplicity, low temperature, and short reaction time. Barium hydroxide and two kinds of titanium dioxide which has different size were used as precursors. In result, conversion of each kind of titanium dioxide to barium titanate was different; conversion of titanium dioxide with smaller size was larger than that with larger size. Due this difference, optimal conditions of each kinds of titanium dioxide were different. Size of synthesized barium titanate particles was dependent on the size of titanium dioxide. Using smaller size of titanium dioxide, smaller barium titanate particles were obtained.