

## Growth of Nanocrystal Using an Anodic Aluminum Oxide

김태형, 이미선, 정수환\*  
경북대학교 화학공학과  
(shjeong@knu.ac.kr\*)

We describe a unique method which makes uniform size and high density nanocrystal arrays ( $6 \times 10^8 - 5 \times 10^{10} \text{ cm}^{-2}$ ) using an anodic aluminum oxide (AAO) template as zepto-liter reaction vessel. Two-step anodization was carried out. 2<sup>nd</sup> anodization time was very short (50 S) to produce a high density zepto-liter beaker arrays with appropriate volume of zepto-liter scale. Zepto-liter beakers were filled with NaCl solution by discontinuous dewetting and solvent was evaporated at room temperature. Size of nanocrystals could be adjusted in the range of 20–45 nm, depending on precursor concentration and volume of vessel. Fraction of NaCl nanocrystal filling in each pore was 90 ~ 95 %. This method is very simple and convenient. Moreover, we can grow nanocrystals on substrate directly. Although we show the preparation of NaCl nanocrystal arrays here, we expect this method would be generalized in growing different kinds of nanocrystals.