

### Fabrication of TiO<sub>2</sub> Thin Films with Controlled Morphology by Aerosol Flame Deposition Process

Ding Jinrui, 김교선\*

강원대학교

(kkyoseon@kangwon.ac.kr\*)

Nanostructured TiO<sub>2</sub> thin films have great potential in solar energy applications, such as photo-splitting of water and dye sensitized solar cells. In our study, both columnar and granular morphologies of thin film were obtained by Aerosol Flame Deposition (AFD) process. The effects of the various process parameters, such as precursor feed rate, deposition height, total gas flow rate and deposition time on resultant morphology and thickness of TiO<sub>2</sub> thin films were investigated, respectively. Particles sintering dynamics were also discussed by comparisons on various characteristic times. Individual particle deposition process was concluded as the dominant process for deposition based on our process conditions.