

## BFA9

Fabrication and characterization of vanadium oxide film with Pt dopant for cathode of thin film battery

박막전지의 양극물질인 산화바나듐 박막의 Pt 도핑에 따른 전기화학적 특성 평가

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Vanadium oxide ( $V_2O_5$ ) thin films with Pt dopant were deposited on Pt/TiO<sub>2</sub>/SiO<sub>2</sub>/Si substrates by using direct current magnetron sputtering at room temperature. FT-IR and X-ray measurements showed that the as-deposited vanadium oxide films were  $V_2O_5$  and amorphous phase, which were not concerned with add of Pt. Scanning electron microscopy measurements revealed that the grain size of the as-deposited  $V_2O_5$  film was increased with increase of the Pt doping. That is, the grain shape of the as-deposited films was changed by Pt doping. Room temperature charge-discharge measurements based on a half-cell with a constant current clearly indicated that the Pt doping could improve the cyclibility of the as-deposited  $V_2O_5$  films. Furthermore, the Pt doping could increase the capacity of the as-deposited films, whereas other metal doping showed less capacity than the pure  $V_2O_5$  cathode. This result suggested that the amorphous  $V_2O_5$  film growth with Pt dopant is one of the keys for the high performance thin film battery with the  $V_2O_5$  cathode film.