

금속산화물 코팅을 통한 박막 LiCoO₂ 양극의 전기화학적 특성 향상
The Effect of Metal-Oxide Coating on the Electrochemical Properties in Thin-Film LiCoO₂ Cathodes

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To improve the electrochemical properties of thin-film LiCoO₂ cathodes, metal oxides were coated on the LiCoO₂ thin films using rf sputtering. Galvanostatic charge-discharge experiments showed the enhanced cycling behaviors in the metal-oxide coated LiCoO₂ thin films than the uncoated ones. These results are because the metal-oxide coating layer suppresses the degradation of Li-diffusion kinetics during cycling, which is related to the protection of cathode surface from the electrolytes [1-3]. The variation in the metal-oxide coating thickness ranging from 10 to 300 nm did not affect the electrochemical properties. Changes of lattice constants in the coated and bare LiCoO₂ thin films at different charged states will also be discussed.

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