

# Investigation on Thin Film Lithium Microbatteries

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**Abstract**—Thin film lithium microbatteries were investigated in this project in which LiCoO<sub>2</sub> cathodes about 200 to 500 nm were fabricated by pulsed-laser deposition (PLD) at different processing parameters such as laser energy and fluence, substrate temperature, background gas pressure, and target-substrate distance. Structure, microstructure and composition of as-deposited LiCoO<sub>2</sub> films were determined by XRD, SEM and XPS. Optimal deposition parameters were identified. Relaxation of open-circuit voltage of as-prepared cells and charge-discharge cycling were conducted to characterize the electrochemical properties of microbatteries made of these LiCoO<sub>2</sub> films.

[Full Text Not Available]