The Commercial LiCoO\(_2\) particles, which were 7.7\(\mu\)m in average diameter, were coated with Al\(_2\)O\(_3\) by a gas suspension spray coating method. The coating amount of Al\(_2\)O\(_3\) on the surface of LiCoO\(_2\) was varied from 0.1 to 2 wt.% and compared their electrochemical characteristics with those of bare LiCoO\(_2\). Al\(_2\)O\(_3\) coating on the surface of LiCoO\(_2\) increased surface area and electrical conductivity, and showed the better cycle and thermal stability even at the higher voltage. The observed optimum Al\(_2\)O\(_3\) coating amount that exhibited the highest capacity retention was 0.2 wt.\%.

![Graph 1](image1.png)

**Fig. 1.** Cycleability of raw LiCoO\(_2\) and Al\(_2\)O\(_3\) coated LiCoO\(_2\).

![Graph 2](image2.png)

**Fig. 2** Comparison of thermal stability of the cell between raw LiCoO\(_2\) and Al\(_2\)O\(_3\) coated LiCoO\(_2\).