Title of Presentation (times new roman, 12, bold, centered)

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Introduction:
Please follow this template to make your abstract. Short abstract should be a 1 page, 2-column document in Times New Roman, 10, single line spaced.

The rest of this text is a template to be used for your abstract.

\[
\Delta S(x) = F \left[ \frac{\partial E_0(x, T)}{\partial T} \right]_x
\]

\[
\Delta H(x) = F(-E_0(x, T) + T \left[ \frac{\partial E_0(x, T)}{\partial T} \right]_x)
\]

To minimize the effect of self-discharge during the temperature variation that may alter the electrode composition, temperatures lower than the ambient ones were used.

Experimental:
Aluminum coated cathodes based on stoichiometric Li₁Mn₂O₄ and lithium-rich Li₁.08Mn₂O₄ were provided by courtesy of ENAX Co., Japan. Half-cells consisting of 2016 coin-cells using metallic lithium as the counter and the reference electrode and 1M LiClO₄ in PC as electrolyte were prepared in an argon filled dry box and cycled galvonostatically (C/10 rate) between 2.9 and 4.4V for 5 cycles at the room temperature. This allows the charge and discharge capacity to stabilize. The thermodynamics data were then recorded using the ETMS as described in a previous work³.

Results:
Fig. 1 shows the OCV profile of the two cathodes taken at the room temperature. Both show typical two ‘4V’ plateaus covering the 0.2-0.6 and 0.6-1.0 composition range. Differences in the profiles can be seen such as a flatter high voltage plateau in stoichiometric the stoichiometric material and a lower end tail (around x=1) in the non stoichiometric one. The corresponding entropy curves are displayed in Fig. 2 and were divided according to phase transitions at defined compositions. The entropy profiles are also different in both materials. In fact the two-phase system behavior is more pronounced in the stoichiometric material at low Li composition (up to x~0.33). A sharp increase in the non-stoichiometric material for x>~0.95 is also observed. Such differences may be due to stoichiometry related delays in phase transitions, in particular the cubic to tetragonal phase transition around x=1. Other phase transitions will be discussed in this presentation.

References:

¹K. E. Thomas et al. JECS 148(2001)A570
²Y. Reynier et al. J. Power Sources 119-121(2003)850