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(54) **SYSTEMS AND METHODS INVOLVING USE OF NITROGEN-CONTAINING PLASMA TO TREAT LITHIUM IRON PHOSPHATE CATHODES**

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(57) **ABSTRACT**

Systems and methods related to manufacturing of Lithium-Ion cells and Lithium-Ion cell cathode materials composed of LFP (Lithium Iron Phosphate) or LMFP (Lithium Manganese Iron Phosphate) are disclosed. In one exemplary implementation, there is provided a method of using a Nitrogen-containing plasma to treat the Lithium-Ion cell's LFP or LMFP cathode materials. Moreover, the method may include treating the LFP or LMFP cathode materials before and/or after coating the cathode materials on a metal foil.

