

**(310-042) - Effect of Nb content on the structural and electrochemical properties of the La<sub>0.7</sub>Mg<sub>0.3</sub>Al<sub>0.3</sub>Mn<sub>0.4</sub>Co(0.5-x)Nb<sub>x</sub>Ni<sub>3.8</sub> (x= 0 - 0.5) Hydrogen Storage Alloys**

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With the rapid development of electric equipments, the demand for the nickel/metal-hydride (Ni/MH) rechargeable batteries with high performances has increased rapidly. Rare earth-based AB<sub>5</sub>-type alloys have been exploited as negative electrode materials in commercial Ni/MH cells. In this work, the structure and electrochemical properties of the La<sub>0.7</sub>Mg<sub>0.3</sub>Al<sub>0.3</sub>Mn<sub>0.4</sub>Co(0.5-x)Nb<sub>x</sub>Ni<sub>3.8</sub> (x= 0- 0.5) hydrogen storage alloys have been investigated systematically. The discharge capacity, activation and cycle stability of the alloy electrodes were measured on Arbin BT4 potentiostat. Each electrode was charged at 100 mA/g for 5 h followed by a 10 min rest and then discharged at 50 mA/g to the cut-off potential of -0.9 V. Microstructure and phase composition of the alloy have been investigated using inductively coupled plasma – atomic emission spectrometry (ICP-AES), scanning electron microscopy (SEM), energy dispersive X-ray analysis (EDX) and X-ray diffraction analysis (XRD).

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