Electroless Plating Technology in Batteries

Heat-treated SAF2507 steel with a secondary phase exhibited excellent electroless Ni plating behaviour, which enhances the safety and durability of Li-ion batteries. Furthermore, uniform plating and electrochemical behaviour were achieved after 180 s, suggesting that SAF2507 is superior to AISI304.

Herein, to promote the progress of nickel-based batteries, we developed an "Inside-out" strategy to develop high-performance and high-areal capacity cobalt-free nickel-based cathode by in-situ electroless plating of uniform nickel phosphide on nickel cathode (Ni 2.38 P-Ni(OH) 2) for the alkaline zinc-nickel flow battery (Scheme 1).

Keywords: Vanadium redox flow battery (VRB); Carbon felt; electroless plating 1. INTRODUCTION A continuously increasing interest in energy storage for the grid and remote power systems is predominantly prevailing in the world due to multiple causes such as the capital costs of managing . Int. J. Electrochem. Sci., Vol. 8, 2013 8990 peak demands, the grid ...

Ni plating can be executed via two methods: electroless and electro-Ni plating. To achieve a uniform plating layer, Ni plating was conducted after heat treatment at temperatures ranging...

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The interphase which is generated on the surface of Li foil through electroless plating with a solution of aluminum fluoride can guide uniform Li plating/stripping behaviors ...

A Sn-Ni/graphite sheet composite is synthesized by a simple electroless plating method as an anode material for lithium ion batteries (LIBs). The microstructure and electrochemical properties...

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This study confirms that electroless Ni-plated SDSS can achieve a uniform Ni layer, depending on the electroless Ni plating time. The uniform Ni-plated layer on SDSS ...

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Flexible, lightweight and high conductivity substrates are required for the development of next-generation flexible Li-ion batteries (LIBs). In addition, the interfacial strength between the active material and flexible substrate should be optimized for high-performance LIBs. Herein, cotton cloth (CC) is employed as a flexible substrate, and electroless plating is utilized ...

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Nevertheless, nickel-plating SDSS can achieve excellent electrical conductivity, making it suitable for Li-ion battery cases. Therefore, this study analysed the plating behaviour of SDSS plates after nickel plating to leverage their exceptional strength and corrosion resistance.

A Sn-Ni/graphite sheet composite is synthesized by a simple electroless plating method as an anode material for lithium ion batteries (LIBs). The microstructure and electrochemical properties of the composite are characterized by field emission scanning electron microscopy (FE-SEM), transmission electron microscopy (TEM), cyclic voltammetry ...

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