

Flowerlike α -Nickel Hydroxide Intercalated with Different Anions via Dodecyl Sulfate Template: Enhanced Chemical Stability and Supercapacitive Property

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α -Ni(OH)₂ has superior theoretical electrochemical capacity compared to β -Ni(OH)₂. Because it is unstable phase, it limits commercial products. In this poster, homogeneous precipitation using hexamethylenetetramine via dodecyl sulfate template is employed to make flowerlike α -Ni(OH)₂, which can endure strong acid and alkali medium compared to other reported α -Ni(OH)₂. By intercalating desired anions (NO₃⁻, Cl⁻, OAc⁻ and SO₄²⁻), basal spacing of α -Ni(OH)₂ can be controlled, which affect their specific capacitance. SO₄²⁻ intercalated α -Ni(OH)₂ which has the highest value of basal spacing can deliver 644 F/g at 5mV/s of scan rate and have good electrochemical stability after 1000 cycle test. It suggest that flowerlike α -Ni(OH)₂ with high chemical stability as well as electrochemical stability is a promising supercapacitor electrode materials.